

# RADIO AMATEUR

- ICOM IC 728 HF Transceiver Review
- 1992 RD Contest Results
- Little "L" Inductance Bridge for RF Coils
- Morse Trainer for GW Basic

NOVEMBER 1992

RRP \$3.25



THE WIA RADIO AMATEUR'S JOURNAL

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### Cover

This month's cover shows Marilyn Syme, VK3DMS, with her award-winning collection of postal items entitled "Radiomania", which traces the history of radio and its use by amateur operators. The full story of Marilyn's success appears in the ALARA column on page 26, in this issue.

## Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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## Editor's Comment

Bill Rice VK3ABP  
Editor

### Miscellaneous Observations

This month's comment will be something of a "hotch potch" of unrelated topics for two reasons. Most significant is the fact that my XYL and I (together with another couple, friends of long standing) have just returned from a 23 day visit to Indonesia.

Travel, it is said, broadens the mind. In my case the profusion of new experiences will take quite some time to be absorbed. My mind certainly feels broadened. Rolled out flat might be nearer the truth! The second reason is simply that a number of small items do call for comment at this time, but none is in itself big enough to warrant a whole editorial.

The trip to Indonesia does however deserve a whole article, even if restricted purely to the amateur radio aspects. Hopefully, you will be able to read it early next year. Some of the most outstanding impressions needing advance mention are:-

- We Australian amateurs should be very grateful that English is our mother tongue (for most of us, anyway), so that its use for amateur radio world-wide saves us having to learn another language. Some Indonesians can converse in four or five languages!
- In Australia, amateurs have the choice as to

whether or not they will be members of the WIA. Some of us have no doubt that we should; but the choice is free. Not so in Indonesia. If not a member of ORARI, one will not be licensed.

- By Australian standards, the road traffic (in Java and Bali at least) is incredible, and at times terrifying. Java is about twice the area of Tasmania, but its population is about 80 million. Many of its roads are surprisingly narrow.

Now for something different! Partly because of the demands this magazine makes on my time, not to mention time spent recently in "travelling North", I don't often "get on the air". In fact most of my antennas have fallen down or come apart in the wind over the past few months, and Melbourne's recent record rains haven't helped with repair work. For these and other reasons, although it would be gratifying to get involved with newer modes like fax or packet, one should first do justice to phone, maybe even CW?

Having explained why I do not yet have packet facilities, what I hear about bulletin boards in particular from others makes me wonder whether I want it anyway. It seems that there is a great deal of half-baked rubbish on BBSs, including material which may be un-

true or defamatory. The problem appears to be world-wide. We have some idiotic individuals already on the FM repeaters, where at least their inanities are transient. On a BBS, material is on display to all, perhaps for days or weeks, or may be printed-out in more permanent form. Untruths become libellous, rather than slanderous. You may think you have a good story; it may seem that someone deserves to be attacked or accused; but first of all, be sure you have the facts! If in doubt, DON'T! Unless, that is, you really want to be sued for libel!

ar

## WIA News

### From the WIA Federal Office

#### Clarification of WIANEWS Item

In last month's magazine I included a WIANEWS item entitled "Progress of New Licence Conditions". In that item I explained why the WIA had not released any details of the final version of the new deregulated licence conditions for radio amateurs in Australia.

It has come to my notice that some people misinterpreted a part of what we said. Can I make it quite clear to those people that

there was no intention to suggest that the commercial magazine referred to had in any way ignored a request from the DoTC not to release any details of the new licence conditions. The WIA knew that DoTC had simply forgotten to pass on to them the same request that had been made to the WIA.

Even though the WIA does not always agree with what is written in the pages of *Amateur Radio Action* magazine, I know from several years of working in

conjunction with them that the folks at ARA are ethical people and have never dishonoured the confidentiality of an "off the record comment" or an embargo date on release of a news item.

#### Electrical Hazard

The WIA believes that the following letter from the Chief Electrical Inspector of the State Electricity Commission of Victoria deserves maximum publicity.

*I am writing to ask for your assistance in alerting your members of the potential danger associated with High Voltage Probes as used in testing television receivers, transmitters and other equip-*

## WIA Divisions

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually their residential State or Territory, and each Division looks after amateur radio affairs within their State.

Division	Address	Officers	Weekly News Broadcasts	1992 Fees
VK1	ACT Division GPO Box 500 Canberra ACT 2601 Phone (06) 247 7006	President Christopher Davis VK1DO Secretary Jan Burrell VK1BR Treasurer Ken Ray VK1KEN	3,570 MHz 2m ch 8950 Rebroadcast Mondays 8pm 70 cm ch 8525 2000 hrs Sun	(F) \$70.00 (G) (S) \$56.00 (X) \$42.00
VK2	NSW Division 109 Wigram Street Parramatta NSW (PO Box 1066) Parramatta 2124 Phone (02) 589 2417 Fax (02) 533 1525	President Terry Ryeland VK2UX Secretary Bob Lloyd Jones VK2YEL Treasurer Bob Taylor VK2AOE (Office hours Mon-Fri 11.00-14.00 Wed 1900-2100)	From VK2W1 1.845, 3.595, 7.146*, 10.125, 24.950, 28.320, 52.120, 52.525, 144.130, 147.000, 438.525, 1281.750 (*morning only) with relays to some of 14.150, 18.120, 21.170, 584.750 ATV sound. Many country regions relay via a local 2 metre repeater. Sunday 1000 and 1915. Highlights included in VK2AWX Newcastle Monday 1930 on 3.593 plus 10mx, 2mx, 70cm, 23cm. News headlines by phone (02) 552 5188. Some broadcast text can be found on the Packet network.	(F) \$88.75 (G) (S) \$63.40 (X) \$36.75
VK3	Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone (03) 885 9261	President Jim Linton VK3PC Secretary Berry Wilton VK3XV Treasurer Rob Bailey VK3XLV Office hours Tue & Thur 0830-1530	1.840MHz AM, 3.615SSB, 7.085SSB, 53.900 FM(R) Mt Dandenong, 148.700 FM(R) Mt Dandenong, 148.800 FM(R) Mildura, 145.900 FM(R) Swan Hill, 147.225 FM(R) Mt Baw Baw, 147.250 FM(R) Mt Macedon, 438.075 FM(R) Mt St Leonard 1030 hrs on Sunday.	(F) \$72.00 (G) (S) \$58.00 (X) \$44.00
VK4	Queensland Division GPO Box 638 Brisbane QLD 4001 Phone (07) 284 9076	President John Aarsse VK4QA Secretary Ken Ayers VK4KD Treasurer David Travis VK4ATR	1.825, 3.065, 7.118, 10.135, 14.342, 18.132, 21.175, 24.970, 28.400 MHz. 52.525 regional 2m repeaters and 1296.100 9090 hrs Sunday. Repeated on 3.605 & 147.150 MHz, 1930 Monday	(F) \$70.00 (G) (S) \$56.00 (X) \$42.00
VK5	South Australian Division 34 West Thebarton Road Thebarton SA 5031 (GPO Box 1234) Adelaide SA 5001 Phone (08) 352 3428	President Bob Allen VK5BJA Secretary Roland Bruce VK5OU Treasurer Bill Wardrop VK5AWM	1820 kHz 3.550 MHz, 7.095, 14.175, 28.470, 53.100, 145.000 147.000 FM(R) Adelaide, 148.700 FM(R) Mid North, 146.900 FM(R) South East, ATV Ch 34 579.000 Adelaide, 444.250 Mid North Barossa Valley 148.825, 438.425 (NT) 3.555m 146.5000, 0900 hrs Sunday	(F) \$70.00 (G) (S) \$56.00 (X) \$42.00
VK6	West Australian Division PO Box 10 West Perth WA 6005 Phone (09) 388 3888	President Cliff Bastin VK6LZ Secretary John Farnen VK6AFA Treasurer Bruce Hedland-Thomas VK6OO	146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 3.560, 7.075, 14.115, 14.175, 21.185, 28.345, 50.150, 438.525 MHz. Country relays 3.582, 147.350(R) Bussellton 146.900(R) Mt William (Bunbury) 147.225(R), 147.250(R) Mt Saddleback 146.725(R) Albany 146.825(R) Mt Barker broadcast relayed on 146.700 at 1900 hrs.	(F) \$80.75 (G) (S) \$48.60 (X) \$32.75
VK7	Tasmanian Division 148 Denwent Avenue Lindisfield TAS 7015	President Tom Allen VK7AL Secretary Ted Beard VK7EB Treasurer Peter King VK7ZPK	148.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.750 (VK7TRW), 3.570, 7.090, 14.130, 52.100, 144.100 (Hobart) Repeated Tues 3.590 at 1930 hrs	(F) \$67.00 (G) (S) \$53.65 (X) \$39.00
VK8	(Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown received on 14 or 28 MHz).		Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)	Three-year membership available to (F) (G) (X) grades at fee x 3 times.

Note: All times are local. All frequencies MHz.

ment requiring High Voltage measurements.

The result of a recent coronal inquest in this state has highlighted the dangers associated with the use of such test equipment. The victim in this incident was a qualified "A Grade" Licensed Electrical Mechanic who was testing a Radio Frequency Welding machine. He had extensive experience in testing and repairing this type of equipment.

The test instrument used in this instance was a Leader High Voltage Probe LHM80 which was designed to measure voltages up to +25,000 Volts DC, however care must be taken when using any test instrument on live electrical equipment.

Always ensure that the test equipment is maintained at earth potential. It is essential that the earth clip is connected and securely attached to the earthed frame. Serious injury or fatality can result if the earth clip is not securely connected to earth or is at any time connected to the "hot" side of any high voltage circuitry.

Particular attention was drawn by the Coroner to the growth of the service industry associated with microwave ovens. The Coroner noted that the high voltage supply in microwave ovens is negative with respect to earth. Its existence can be measured with a high Voltage probe, similar to this instrument, used inversely which may prove fatal.

This incident has highlighted the need to ensure that:

- tools and equipment are kept in good working conditions;
- equipment is used within the manufacturers guidelines;
- the earth connection is intact and operative;
- extra care is taken when

working in the vicinity of live electrical equipment.

There has been an increase in the occurrence of Electrical fatalities and serious electrical accidents involving electrical workers including engineers, technicians and mechanics in the past year.

We must all take greater care when working with any electrical equipment.

I request your assistance in warning your members, many of whom are involved with the testing, repair and manufacture and design of electrical equipment that caution should always be exercised when working on live equipment.

### Major Overhaul of Radio Frequency Policy

A statement recently released by Mr Bob Collins, the Minister for Transport and Communications, announces a major review of policy on the management of the radio frequency spectrum. This follows the Government's receipt last year of the "Management of the Radio Frequency Spectrum" report from the House of Representatives Standing Committee on Transport Communications and Infrastructure.

Members were kept informed of the progress of this review, and the input to it supplied by the WIA.

The statement establishes Government policy for all spectrum users except broadcasting which remains under the control of the Australian Broadcasting Authority. The reform strategy adopted is in three parts. It intends to:

• carry out the phased introduction, in selected areas of the spectrum, of a market based system of spectrum management using tradeable spectrum access rights;

• improve legislation and administration by

— introducing a more flexible standards regime;

— introducing class licensing for small, low-power users of the spectrum;

— eliminating the practice of allowing users to reserve unused spectrum at reduced fee levels;

— allowing users to renew licences at banks, post offices, etc; and

• create a Spectrum Management Agency to implement the reforms."

Although the Amateur Radio Service as such does not rate a separate mention, it is noted that "there will be special arrangements for public and community use", with provision for spectrum to be allocated for the exclusive use of such services, and the power to buy or resume if a need arises.

The market system will allow licensees to trade, amalgamate, or mortgage licences, and vary equipment or technical parameters and type of use. However, safeguards, particularly against interference will be included.

Other proposed changes in the administratively based system of licensing include provision for auditing of spectrum use, and introduction of class licences to allow regulation of low power equipment not requiring individual licensing. The existing system of licence categories and prices will also be overhauled and simplified, and "the Department's outmoded computer-based spectrum management information system, known as SMIS, is to be replaced by a new system that, among other things, will provide a publicly accessible on-line database on licences and frequency assignments."

### Courtesy On Air

A number of members have recently voiced criticism

of the behaviour of other amateurs on air, particularly about some of the material that is promulgated via the various Bulletin Boards.

While there has been a certain amount of deregulation over the past years, and more is before us, a majority of Australian radio amateurs believe that there is a need to maintain an accepted standard for both spoken and written transmissions.

Perhaps the digital mode Bulletin Boards are worse than the repeaters, where the offending remark is lost for all time as soon as it is uttered. Anyone who has demonstrated the use of a repeater, or amateur radio in general, to a non-amateur and found the listener exposed to a stream of objectionable language will agree that there must be standards.

Apparently the problem is not unique to Australia. I quote from part of an editorial comment, modified slightly to fit the Australian scene, written by David Sumner K1ZZ, Executive Vice President of the American Radio Relay League (ARRL), which was published in the August 1992 edition of QST, the journal of the ARRL:

"A lot of amateurs are pretty upset with the antics of a few in our midst — the tiny handful of folks who don't seem to understand that the ham bands are a public place, demanding a higher standard of behaviour than might apply in private.

Look at it this way. Nobody cares what you and your buddies talk about when you're sitting around your living room, when you're car pooling together, or anywhere you're out of earshot of an unwilling audience. If your group taste runs to the risqué or the argumentative, that's your business. But you wouldn't sub-

ject strangers at the next restaurant table, or in line with you at the supermarket, to an off-colour joke or a fractious debate. That's simple common courtesy that you learned in kindergarten, if not before.

How this principle translates to Amateur Radio ought to be obvious. To some, apparently, it's not. Your microphone and keyboard carry your words a lot farther than just to the station or roundtable you're in contact with. Lots of people, licensed amateurs and just listeners, are tuning around the bands at any given time. Too often we hear from hams who've been embarrassed by what they've heard while showing Amateur Radio to a friend, or even worse, to a young person. By the time they realise what's happening, the damage is done.

Now, no one should ex-

pect the regulatory authority to enforce common courtesy. That's not their job, for a lot of good reasons. . . . Some complaints we hear are about people who simply don't think before they hit the push-to-talk switch or upload a flaming packet message. They're not bad guys, they're just insensitive; help them to see themselves as others see them, and their share of the problem will go away.

Unfortunately, for reasons better explored in psychiatry than in Amateur Radio journals, others relish notoriety. Tell them they've offended you, and you've made their day. Tell them you're going to report them to the authorities and you've REALLY made their day, particularly if, as is often the case, what they're doing is in poor taste but not illegal.

What about the tiny (and we know it's tiny because the

same call signs keep popping up as examples) hard core whose favourite expression is...well...hard core? There's a general feeling that "nothing's being done" about this part of the problem. That feeling is not accurate and is about to become even less so."

David's editorial then proceeds to outline some of the steps being taken in the USA to overcome the problems.

What is the amateur community in Australia doing to combat the lowering of standards by a small minority? More to the point, what are you doing about it?

### **Congratulations to Pakistan**

The WIA Federal office has just received a copy of the Pakistan Amateur Radio Society Guide and Call Book for 1992. This very creditable production is the first ever such publication for this society.

The record of licensees (144) occupies four of the 156 pages. About 50 of these licensees each have a single page of personal and operating information. The remainder of the book is a mine of information from the examination syllabus to satellite communications, including frequency allocations, band plans, international regulations, prices of rigs, antenna building and setting up a station. Congratulations to PARS on this major achievement. We are advised that further copies are available from PARS for \$6.00, presumably US \$.

### **WIA President Moves Around**

The Federal President of the WIA, Ron Henderson VK1RH, has continued his visits to Divisions and clubs with two more recent visits.

Ron went to Sydney in late August to attend the VK2 Division's forum. That fo-

# ICOM

adds a new sophistication to the meaning of the word basic...

To most of us basic means you miss out on performance and quality, but not any more, the new Icom IC-728 might be Icom's 'basic' H.F. transceiver, but in fact it makes many other transceivers look pretty basic by comparison!

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You might think that a few years of reviewing H.F. transceivers would make any amateur a bit jaded, well obviously not, here is what Neil Duncan, VK3OK, had to say about the IC-728...

*"Getting the IC-728 up and running is a treat"*

*"It almost runs itself—the learning time is very low"*

*"DX'ing on 20 metres is a snap with a hot little receiver like this one!"*

*The manual "is an absolute pleasure to use"*

*"I must say that the IC-728 offers very good value for money indeed."*

Amateur Radio Action — 9 June 1992

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rum identified a number of matters of concern to members and VK2 amateurs. Some thirteen large sheets of paper were filled with key points and examined at some length.

Ron would like to compliment the VK2 Council and, in particular, the forum organisers Bob, Terry and Julie for their efforts. Listeners to the VK2 broadcast will already be aware the Divisional Council has started actions arising from the forum.

The second visit was to the Canberra Amateur Packet Radio Group's technical symposium in early September. Actually Ron is a member of that group and was one of the seven presenters delivering a technical paper during the day. The topics ranged from radio astronomy through digital communications to interference sources. A complex packet display, with equipment valued collectively at over ten thousand dollars, was also demonstrated to those present.

### **ARRL Interference Leaflet**

The Federal Office recently received from the ARRL copies of a leaflet entitled "What to do if you have an electronic interference problem". It is directed at both the amateur and the neighbour who may believe the amateur is at fault, and explains in detail the meaning of "interference" and possible types, some of the causes, the responsibilities of manufacturers, operators and users and how to go about seeking help.

Emphasis is placed on co-operation with authorities or neighbours, and simple tests which can help to identify the source of the problem. In addition, of course, it includes a plug for the newly revised ARRL publication Radio Frequency Interfer-

ence — how to Find It and Fix It".

### **Good Publicity for Amateur Radio**

The ARRL Newsletter of 24th September 1992 reports on the amateur activities of the latest Space Shuttle Mission, which landed on 20th September. We quote one of the beacon messages from the shuttle's packet robot:

*"1400 UTC 18 September. We had a nice demonstration today of amateur radio's ability: The White Sands, New Mexico, ground station for the data relay satellites NASA uses for our shuttle air-ground comms went off the air unexpectedly for about 15 minutes. As it happened, this was just prior to a planned school contact via Andy VK4KIV. Andy relayed to Houston's mission control centre for us and bridged the gap in communication via ham radio! We were able to learn exactly what the problem was, and told MCC what our plans were, averting any possible confusion. Thanks Andy!"*

More than 600 amateurs connected to the Shuttle's robot packet station in the first 24 hours of the mission. 456 amateur stations were logged as "worked" on packet, and many excellent voice contacts were achieved. QSL or SWL cards should be sent (with an SASE) to Jay Apt, N5QWL, 806 Shorewood Drive, Seabrook, TX77586, USA. The next scheduled flight will be on 18th February 1993.

### **More Good Publicity**

The WIA Federal Office has also received a 2-page extract from the Pakenham Gazette for 26th August 1992, which presented an extended article, with photographs, about Cyril Minns VK3AJM, who has been an amateur for most of his life.

Cyril was one of the very first blind amateur radio operators to be licensed, in 1957. One of the main points made in the article was that the hobby can be enjoyed by all, noting that Cyril has modified much of his equipment, and participates in WICEN and other such activities.

The Federal Office is always pleased to receive such items for addition to the print media "Scrap Book".

### **Compatibility Agreement**

We quote from the ITU Press release of 18th September 1992:

*"For some time, experts have considered the problem of interference between FM sound broadcasting stations and aeronautical radio systems. At a meeting of Task Group I2-I of ITU's International Radio consultative Committee (CCIR) held at ICAO Headquarters (Montreal Canada), 36 international experts drafted a recommendation that will allow countries to assure compatibility between the broadcasting and aeronautical services which both utilise the radio frequency spectrum in the vicinity of 108 MHz."*

*"Participants included representatives from 10 countries, 4 international organisations and 3 operating agencies."*

### **Australian Broadcasting Authority**

The Australian Broadcasting Authority (ABA) began on 5th October 1992. It will assume some of the powers and functions of the former Australian Broadcasting Tribunal and the Station Planning Branch of the Department of Transport and Communications. It will have responsibility for all the planning, licensing, programming and ownership

and control functions for broadcasting services within Australia.

### **Amateur Radio Early Closing**

Contributors, columnists and advertisers are reminded that the closing date for editorial copy for the January edition of Amateur radio magazine is 30th November. This is to allow for time lost due to the holiday period.

### **HF Bandplanning in IARU Region 2**

The ARRL Newsletter of 24th September reports on the meeting of the General Assembly of Region 2 of the IARU, held in Netherlands Antilles from 31st August to 4th September.

Amateurs from 34 Western Hemisphere nations, including 10 proxies, attended. One of the main topics discussed was HF bandplanning, with emphasis on digital segments to reflect current usage and to align the Region 2 plans with Regions 1 and 3. Apart from the 7 MHz band, where the USA allocation does not coincide with allocations in other parts of the Region, agreement was fairly well achieved.

The resultant agreement designates segments for "Digital Modes", with a sub-segment designated "packet Priority". Recommended HF band segments for CW and for radiotelephone (including SSTV and FAX) were unchanged: CW is still acceptable in all segments.

The agreed HF digital segments are as follows:

- 80 metres: 3580-3635 kHz, packet priority 3620-3635 kHz.
- 40 metres: 7035-7050 kHz, packet priority 7040-7050 kHz (international), 7100-7120 kHz (within Region 2).
- 30 metres: 10.130-10.150 MHz, packet priority



- 10.140-10.150 MHz.
- 20 metres: 14.070-14.112 MHz (with 1 kHz guard band at 14.100 for the beacon network), packet priority 14.095-14.0995 MHz, packet shared with SSB at 14.10005-14.112MHz.
- 17 metres: 18.100-18.110 MHz, packet priority 18.105-18.110 MHz.
- 15 metres: 21.070-21.125 MHz, packet priority 21.090-21.125 MHz.
- 12 metres: 24.920-24.930 MHz, packet priority 24.925-24.930 MHz.
- 10 metres: 28.070-28.189 MHz, packet priority 28.120-28.189 MHz.

### 1993 Call Book

The 1993 edition of the Australian Radio Amateur Call Book was finally received at the Federal office on Friday 9th October 1992. This is the biggest and best Call Book yet, with over 18,000 entries, as well as a vast amount of reference material. Orders have been despatched to Divisions, so those of you who had orders in should have received your copy by now.

Order your copy now of the 1993 Australian Radio Amateur Call Book while stocks last.

### WIA helps Bangladesh

In response to a request from David Rankin 9VIRH/VK3QV, Chairman of IARU Region 3, the WIA Federal Office has been in touch with the President of the Bangladesh Amateur Radio League. BARL has been asked to consider taking over the task of running amateur examinations for Bangladesh, and the WIA was happy to supply materials and advice to assist. We await word on further developments.

Bill Roper VK3ARZ  
Brenda Edmonds VK3KT

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# Equipment Review - The ICOM IC-728 HF transceiver

Ken Fisher VK3OM  
"Gaelanungah"  
24 Sugarloaf Rd  
Upper Beaconsfield 3808

**A**RE YOU IN THE market for a budget priced HF transceiver? If so, could I suggest you read this review carefully. The new ICOM IC-728 might be just what you are looking for. Budget prices often mean that some essential features are missing but, on the other hand, are all the features on many of the mid or top-priced rigs really essential or just nice to have from time to time? On the transmit side, does the operator at the other end of the contact really know if your transceiver cost \$1500 or \$5500? In most cases I rather doubt it.

However, this is getting a bit ahead of the subject in hand. What is the IC-728? What does it have to offer?

The IC-728 is an updated replacement for the IC-725. Added features have really transformed the 728 into the top performer in the low priced field.

The IC-725 has been marketed for just over three years, and in that time has been established as an excellent no-nonsense HF transceiver, ideal both for mobile and base station use. It featured a full general coverage receiver, 100-watt transmitter power output and 26 multi-function memories. Perhaps the only features lacking were a speech processor and any form of receiver interference rejection. Well, ICOM has incorporated both in the new IC-728. Not only that, but the speech compressor has a level "set" control which puts it way ahead of the others in the class. The receiver now has "pass band tuning" which gives excellent rejection against unwanted interference. All this in a package the same size and weight as its predecessor.

In weight, the ICOM comes in at 4.6kg. When you consider that it has

a full metal cabinet and a very large transmitter heat sink, this is a very reasonable figure.

Let's take a detailed look at the IC-728.

The 728 measures 241mm wide, 94mm high and 239mm deep. As mentioned earlier, it weighs in at 4.6kg. The finish is typical ICOM charcoal grey. The rig requires an external 13.8 volt DC supply rated at about 20 amps peak. ICOM produces a variety of power supplies capable of doing the job. A DC power cord is supplied with the transceiver, and this is terminated in the now standard six-pin plastic connector.

Frequency and status display is a high-contrast LCD readout which is illuminated by an orange background. Below this is an eight-pin microphone connector. What a pity these do not have standardised connections like the DC power connector mentioned above! One day, perhaps? To the right are three rotary controls that set AF gain, squelch and microphone gain. Under these are five small push buttons and two miniature rotary controls. The push buttons (in order) are for noise blanker on/off, the receiver 20dB RF attenuator switch, the receiver preamp switch which provides about 10dB of extra gain, the AGC fast/slow decay switch and the transmitter speech compressor switch.

The two rotary controls are for compression level and transmitter RF power level. The three vertically placed buttons are for mode selection. The AM/FM button will select AM receive only unless the optional UI-7 is installed. This will then allow FM transmit and receive and AM transmit. The FM mode is usable only above 29MHz.

The main tuning control is typically ICOM. It's large, well weighted and a delight to use. The four buttons to the right of the main tuning control are the tuning step selectors. Push the kHz button and the tuning changes in one kHz steps. With the MHz button selected, the tuning changes in one MHz steps. This would be used mainly to select general coverage tuning ranges.

The band button selects consecutive amateur bands. With the ICOM band stacking register, the last frequency used on an amateur band is retained, a very handy feature which I note is



now being used by a few other manufacturers. Below the "band" button is the lock button which locks all the functions of the main tuning control.

The top right-hand section of the panel is devoted to the memory function controls. Compared with the older 725, these have been improved to a large extent by moving the memory channel up/down buttons to the bottom right-hand corner.

This frees two buttons which are now used for the A=B function, previously accessed via two buttons, and the function button which has been moved up from the bottom corner. A concentric rotary pair of knobs are for the RIT and passband tuning. A couple of buttons on the right-hand side are for RIT on/off and control of an external optional automatic antenna tuner.

The rear panel has a selection of connectors which gives access to the following facilities. The main RF connector is a standard SO-239. A 3.5mm jack connects to an external speaker. A small latching push button selects the CW break-in function, and a rotary control is used to adjust the delay for this. The CW key jack is a standard 6.5mm three-circuit (stereo) type. Two accessory sockets provide connection to a variety of matching ICOM units such as linear amplifiers, automatic antenna tuners and a TNC for data communications. However, if you wish to use a non-ICOM linear amplifier, there are Phono connectors for transmit control and ALC input.

A second latching push-button switch selects either of ICOM's AH-3 or AT-160 auto ATUs. Finally, there is a connector that can interface with your PC for full remote control of the transceiver. It seems that ICOM has thought of just about everything.

### The IC-728 on the air

Like most modern solid state rigs, the 728 is easy to get on the air. Of course, a suitable power supply is needed, and I already had an ICOM PS-15 which is compatible with most ICOM transceivers, including this one. By the way, AC power switching to the PS-15 is controlled via the power switch on the 728. Plug in the microphone or CW key and an antenna with a 50 ohm impedance and you are on the air.

First thing noted was the smooth

tuning control. There is a screw adjustment on the front panel to set the tension on the knob. I must say I prefer it in the free spinning position, but that's up to you. The display is very clear, with black lettering against the orange background. I would have liked a slightly larger meter, but it is adequate and the illumination is good. Meter functions are limited to "S" meter on receive and relative power output on transmit; fairly spartan, but an indication of ALC action is given by the transmit indicator LED next to the meter.

Band selection is very easy to get used to. It is, of course, done with the "step" buttons and the tuning knob to step through the bands. The system has been used by ICOM for many years on most of its HF transceivers.

Tuning around the amateur bands, the receiver sounded very lively with the preamp switched on. AGC action was excellent on SSB in the slow position, although I would have preferred it a little slower in its decay time. There is no provision to switch the AGC off, which might be a concern to some dedicated CW operators.

The received audio quality was not to my liking at all. It appeared to be lacking in both high and low frequency response, which gave it a very hollow sound. Suspecting the internal speaker, I connected a good quality external unit and the difference was amazing. The audio now came to life, proving that the audio section of the receiver was, in fact, first class. I was also amazed at the amount of audio output the IC-728 produced. Even under very noisy mobile conditions, I am sure there would be plenty of acoustic output. The 728 does not have an RF gain control, in common with some other low-priced rigs. I must say I do like to have an RF gain, and feel unhappy about its omission.

My solution to this would be to make the squelch control a preset on the rear panel and substitute an RF gain for the squelch control on the front panel. After all, the squelch is generally only used with FM operation and, as the FM board is an option, why not sell the squelch control with this? Well, that's my idea anyhow.

Tuning was as expected, very smooth. At normal tuning speed, the rate is two kHz per revolution. At a

faster rate of knob rotation this speeds up to about 10 kHz per revolution. However, if neither of these suits your taste, you can custom set the tuning rate to 10Hz steps (normal), 20 Hz steps — which gives 4 kHz per knob revolution — or 50 Hz steps, which gives 10 kHz per knob revolution. With AM mode selected, the normal tuning rate is in 1 kHz steps, which I think is a bit fast. However, it is simple to select any of the above steps in the AM mode if required. These features are not available on any other of the budget priced transceivers.

I checked the frequency stability and read-out accuracy and found both to be first class. Our review transceiver had a small problem with the lower sideband carrier oscillator drifting slightly. This took about 15 minutes to stabilise and, during that time, moved about 100 Hz. This was, in fact, the major part of the drift that I measured, and I suspect would go unnoticed by most operators. The above drift notwithstanding, you can specify as an option a high stability master oscillator which should bring the total drift down to  $\pm 0.5$  ppm.

The new band pass tuning worked very well. When selected, you can actually narrow down the selectivity either from the top end down or from the low end up. This is a better system than IF shift where the selectivity remains the same but is shifted relative to the received signal. In the latter case, you can move into interference on one side, while escaping it on the other! The noise blanker works very well on ignition-type interference, which is probably where it would be most needed. The blanking level is non-adjustable so you have to take it as it comes. Its action on power line noise was only fair; however, it produced very little cross-modulation on received signals.

The RIT control has a range of  $\pm 1.2$  kHz in 10 Hz steps. ICOM has included a most useful facility with the RIT. Let's say you are offset 250 Hz. Push the "function" button, then the RIT button, and you are transmitting on the offset frequency which now becomes your normal receive and transmit frequency. However, with the RIT in use, there is no indication of what your received frequency is. Not even the main display changes. This appears to

be an oversight which I am sure could be easily corrected.

The memory functions are extremely well thought out. The 26 memories, I think, are plenty for most applications. All the memories take frequency and mode, and two allow for separate transmit and receive frequencies such as operating through a 10m FM repeater. Another two can be programmed to set upper and lower limits for band scanning. Talking about scanning, there are two different memory scan modes. Firstly there is the normal memory scan where all channels are scanned in succession. Additionally, it is possible to scan only those sharing a common mode. The instruction book also describes some modifications that can be made to change certain scan parameters such as scan speed.

### Transmitter operation

Before transmitting, it is essential that a suitable power supply should be obtained. All of my tests were carried out using an ICOM PS-15 power supply which is rated at 20 amps peak output. Output power was checked on all bands and found to be in excess of 100 watts with steady carrier output. SSB was up to 120 watts PEP output on all bands except 10 metres, where it was a fraction less.

Actually these tests created a slight problem, as there is no way that steady carrier can be produced by using any of the front panel controls. You have to actually plug in a key, or at least a shorted plug into the key socket on the rear panel. I wonder why the key socket doesn't have a shorting contact in it? SSB tests were in the first instance carried out with the hand microphone supplied with the IC728. Reports indicated the quality was acceptable, with perhaps a slight emphasis on the high end of the audio scale. The tests were repeated with the compressor switched in. This made a startling improvement with the audio response filling out in the low end and producing excellent audio quality.

Adjustment of the compression control is a bit "hit-and-miss" as no metering of the compression is provided. I found that with the compressor knob at the one o'clock position it was just about right. Microphone gain is set so that the "transmit" indicator (just left

of the meter) just starts to blink. I repeated the tests using an SM-6 desk microphone. Results were much the same but with a little more sparkle in the high audio end.

Back on the subject of power output, while there is no problem with the maximum output, there might be a few with the minimum. This is 10 watts. However, the QRP operators require a maximum output of five watts. Give that some thought, ICOM. No doubt a suitable mod will be available in the near future.

CW operators have not been forgotten in the design of the IC728. While no VOX is included for SSB, a VOX system is available for CW. While it's not full break-in, it's nonetheless very good. The delay to return to receive is adjustable on the rear panel. The transmitter keyed very nicely with a sharp-sounding note.

Two sharp CW filters are available as options. These are 500 Hz, the FL-100, and a 250 Hz, the FL-101. CW reception is actually quite good using the standard SSB filter with the band pass tuning wound in to produce a 1 kHz pass band. Not perfect, and not as good as using a proper CW filter, but certainly not bad, either.

### The IC-728 instruction Book

As an operations manual, the IC-728 instruction book is first class. There are plenty of drawings of both the front and rear panels, with clear descriptions of all control functions. Several pages

are devoted to maintenance, adjustment and the installation of optional extras. Adjustment data include PA idling current setting, RIT adjustment, BFO adjustment, CW sidetone level preset, installation of diodes for alternate scan functions, frequency calibration and the main tuning control brake adjustment.

There is also information on fuse replacement in the DC power cable and an interesting one in the PA unit which could be a little hard to find without the manual. Full marks to all of this. Now if there were only a few pages of technical description, I would give ICOM 10 out of 10. In its absence I would award only seven out of 10.

### The ICOM IC-728 conclusions

With the improvements that ICOM has incorporated in the IC728, it has become the leader in its field. Receiver performance is first class except for the muffled audio from the internal speaker. The IC728 is compatible with a wide range of ICOM optional equipment, which includes at least three automatic antenna tuners, a linear amplifier, two power supplies plus many smaller items such as microphones, speakers and interface units. As ICOM says, "Count on us!" You sure can! Thanks to ICOM (Australia) Pty Ltd for the loan of the IC-728 used in our review.

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**Sign up a new WIA  
member today — we  
need the numbers  
to protect our  
frequencies and  
privileges.**

# "Little-L" Inductance Bridge for RF Coils

Drew Diamond, VK3XU  
Gatters Road,  
Wonga Park Vic 3115

THE CONSTRUCTOR who does not have an LCR bridge generally must fall back on the "resonance dip method" to find the value of unknown radio frequency inductors and capacitors, which in most instances is adequate for our purposes. The problem of small capacitance measurement has been solved, and several designs for direct reading meters have appeared in electronics journals. However, I have long felt the need for a handy little bridge for direct measurement of coils used in HF applications, including antenna tuners, receivers, transmitters and so on. My own experience has shown that a measurement range of 0.5 to about 20  $\mu\text{H}$  would cover just about all of the most commonly encountered requirements. Here is a simple inductance bridge with

a calibrated measuring range of 0.5  $\mu\text{H}$  to about 20  $\mu\text{H}$ . Accuracy is in the order of  $\pm 10\%$ , which is probably adequate for most amateur purposes.

## Circuit

The measuring element is based upon the classic Wheatstone bridge. Our test signal is supplied from a crystal controlled Colpitts oscillator at (nominally) 3.580 MHz. A high Q coil of about 5  $\mu\text{H}$  establishes the mid-range measurement point at that perceived median value. Inductors which differ from 5  $\mu\text{H}$  will require bridge balance, as indicated by a dip on the meter, by manual adjustment at some other point along the travel of the 1 K ohm linear pot. By "exciting" the coil at a radio frequency (rather than 1 kHz, which is the case with most LCR

bridges) we obtain a much better idea as to inductance and "Q-iness" of the coil, particularly where a core or slug is involved.

## Construction

The instrument is housed in a standard aluminium box measuring 10 x 10 x 7.5 cm. Any metal box with slightly smaller or larger dimensions will do. A test frequency of 3.580 MHz was chosen because it lies in an amateur band, so oscillator operation can be easily checked by listening for the signal at that frequency. Naturally, other cheap crystal frequencies such as 4.0, 4.433, or 5.0 MHz may be used if desired.

The oscillator was made "ugly" style on a small rectangle of printed circuit board. But other favoured methods, including tag strip will work satisfactorily, provided all signal carrying leads are kept reasonably short. The same applies to the bridge circuit wiring. By using a smallish box, leads must perform be short, so keeping stray inductance and capacitance to a minimum. Ordinary disc ceramic capacitors are acceptable. A new pot is recommended. To use an old scratchy pot as the adjustable element in a bridge application would be false economy. The meter sensitivity may be 1 mA or preferably, 500  $\mu\text{A}$ . As large a meter as can be accommodated is recommended for a good clear indication of the dip point.

## Calibration

First, confirm that the bridge is operating; oscillator function may be checked by inserting a screwdriver blade into the "hot" LX terminal, and listening for the signal on the station

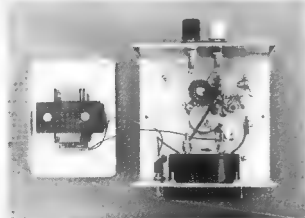


Figure 1 — Internal view showing suggested battery mount.

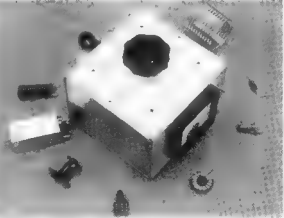
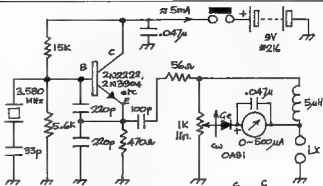


Figure 2 — "Little L" Inductance Bridge.

receiver. The meter should also be indicating FSD or near FSD. Place a short across the LX terminals. You should obtain a pronounced dip at the extreme counter-clockwise (CCW) end of the pot travel, indicating zero  $\mu\text{H}$ . An open circuit should dip (but probably not as deep as 0  $\mu\text{H}$ ) at or near the CW end (infinite  $\mu\text{H}$ ). Connect a coil of about 5  $\mu\text{H}$ . You should obtain a clearly defined dip at about mid pot travel.

We need a number of coils to calibrate the bridge. If you do not have any coils of known inductance, a set of "standards" will be required. Shown are details for values of 0.5, 1, 2, 4, 8 and 16  $\mu\text{H}$  which were measured with a laboratory inductance bridge. By using these singly, and in series combinations, calibration points beyond 20  $\mu\text{H}$  in 0.5  $\mu\text{H}$  steps may be obtained. Or a set of ready-made choke coils of (say) 1, 2.2, 4.7 and 10  $\mu\text{H}$  may be purchased from most parts suppliers. Mark salient calibrations lightly at first with pencil. Do not try to crowd in lots of points, as interpolation will supply any missing information. Use a type-writer, press-on numbers or fine black pen for the final calibration markings. The scale may be protected with a square of perspex, and a disc of perspex attached to the knob skirt as shown.

In actual application, the coil being measured should be connected to the  
(Continued on page 18)



All resistors  $\frac{1}{4}\text{W}$  5%

All capacitors disc ceramic.

5 $\mu\text{H}$ : 28 turns  $\times$  22B4S (0.63mm) on Amidon T68-2 core.

Inductance Bridge for HF Coils.

—VK3XL—

## Morse Trainer for GW Basic

Laurie McInnes VK3AAJ  
7 Gwenda Avenue  
Blackburn Vic 3180.

**T**HIS PROGRAM was prompted by the article CW Trainer by Neil Cornish VK2KCN AR March 1992. It follows the same logic as Neil's program but uses the SOUND command of GW-BASIC or similar dialects of Basic.

The program sends random groups of 2 to 7 characters. You can adjust the speed and the number of characters in the test and choose whether letters only or letters and numerals are transmitted. Start and Finish signals have been included.

After the message has ended you can receive a new random transmission by typing R without going back to the beginning.

Copy the program omitting all REMs except line 10.

The speed is OK on my machine. The easiest way to check it is to set Letters only, 10 wpm, and 50 characters. The average duration of several such messages should be about one minute. To adjust the speed change the number 16.5 in line 160.

```

10 REM GW-BASIC Morse Test. L McInnes VK3AAJ Jun 92. After Neil Cornish, "AR",
    Mar 92
20 CLS: KEY OFF: RANDOMIZE TIMER: DEFINT A-C, E-R
30 FT=1000: REM Freq of tone. Change if desired.
40 FO=32767: REM Designates silence.
50 PRINT TAB(24);"RANDOM MORSE TEST FOR GW-BASIC"
60 PRINT TAB(24);"===== "
70 PRINT:PRINT:PRINT"This program sends up to 250 characters in random groups 2-7
    characters long"
80 PRINT:PRINT"Start and End signals are included to simulate exam conditions"
90 PRINT:PRINT"Select Letters only, or Mixed letters and numerals"
100 PRINT:PRINT"You must tap 'Enter' after each entry"

```

Figure 3 — Calibrating Coil Details.

```

110 PRINT "Get ready to copy before you do the third "Enter" on this page"
120 PRINT:INPUT "ENTER L OR M";CH$
130 CH=36: IF CH$="L" OR CH$="I" THEN CH=26
140 PRINT:INPUT "Enter No. of Characters";KK
150 PRINT:INPUT "Enter Required Speed in W.P.M.";S
160 DUR=16.5/S:REM Increase 16.5 to slow speed and vice versa.
170 DIM A$(36),B$(36),C$(100),D$(100)
180 A$="ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789"
190 FOR L=1 TO CH: A$(L)=MID$(A$,L,1)
200 READ B$(L): NEXT L
210 CLS
220 PRINT:PRINT:PRINT "GO!"
230 C=1: K=0: REM This line & next clear varies for Repeat function.
240 FOR H=1 TO CH: C$(H)="": D$(H)="": NEXT H
250 Q=INT(RND*6)+2: REM Length of group.
260 FOR N=1 TO Q
270 J=INT(RND*CH)-1:K=K+1:REM J is no. in alph; K is no. of chars.
280 C$(C)=C$(C)+A$(J):REM The word to print
290 D$(C)=D$(C)+B$(J)+"2":REM The word to sound
300 NEXT N
310 C=C+1
320 IF K > KK THEN 250
330 T=TIMER: WHILE TIMER (T+.5: WEND
340 A=0
350 SIG$="31313":REM Start signal.
360 GOSUB 610
370 FOR A=1 TO C-1:REM You added 1 in 310, now subtract 1.
380 GOSUB 530
390 NEXT A
400 SIG$="13131":REM End signal.
410 GOSUB 610
420 T=TIMER: WHILE TIMER (T+1: WEND
430 WAIT
440 CLS:PRINT:PRINT "STOP WRITING!"
450 PRINT:PRINT
460 FOR JJ=1 TO C-1
470 PRINT C$(JJ),
480 NEXT JJ
490 PRINT:PRINT:PRINT "To repeat with same parameters, type R"
500 PRINT:PRINT "Else type Q. You can then RUN from the start."
510 PRINT:INPUT "Type R or Q";Y$: IF Y$="R" OR Y$="r" THEN 210
520 PRINT:END
530 FOR E=1 TO LEN(D$(A)):REM Subr. to sound "words"
540 P$=MID$(D$(A),E,1)
550 IF P$, "2" THEN 570
560 SOUND F0,DUR*2:GOTO 580
570 SOUND FT,DUR*VAL(P$):SOUND F0,DUR
580 NEXT E
590 SOUND F0,DUR*5: REM Between-words space. You can increase.
600 RETURN
610 FOR E=1 TO 5: REM Subr. for "Start" & "End"
620 P$=MID$(SIG$,E,1)
630 SOUND FT,DUR*VAL(P$):SOUND F0,DUR
640 NEXT E
650 SOUND F0,DUR*6
660 RETURN
670 DATA 13,3111,3131,311,1,1131,331,1111,11,1333,313,1311,33
680 DATA 31,333,1331,3313,131,111,3,113,113,133,3113,3133,3311
690 DATA 33333,13333,11333,11133,11113,11111,31111,33111,33311,33331

```

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# Technical Abstracts

Bill Orr W6SAI

## The Iron Glove

**T**ELEPHONE RFI is a world wide problem and some of the cures used overseas are novel. Bill Orr W6SAI in CQ May 1992 relates the approach of Sol N4IXO who used a rubber glove filled with steel wool as shielding in a phone.

The glove was filled with steel wool and then placed around the internal components as shielding. Both magnetic and electrostatic shielding would result. The steel wool would be fairly lossy at RF frequencies.

Some care would be needed to avoid shorting out the works. Also experimentation in placement and being able to shut the box again would be in order.

Other cures mentioned were filtering the phone lead. This can be done simply with no modifications to the phone by winding excess lead or maybe an extension lead around a suitable core. A toroid or an old TV EHT core would be fine or maybe a ferrite rod or the core from a TV deflection yoke would also be suitable for experiment. Remember good RF performance is not the main criteria but rather the sopping up of the unwanted stray RF.

For those wanting more information an article in QST May 91 by Pete Krieger WA8KZH is worth reading. Pete has a company K COM which sells RFI suppressed phones and suppression equipment such as filters in the USA.

Locally my attention was drawn by a local broadcast item from the WIA Vic Div concerning AOTC TF200 phones and RFI. The Vic Div has a letter from AOTC concerning such problems.

AOTC or maybe you know them as TELECOM are working on a TF200 phone which has an improved immu-

nity to RFI. A certain amount of persistence and patience may be required however to obtain the desired result. Be aware that it is not a free service. The problem is not common and so may take some explaining.

## Hybrid Quad for 70 cm or 23 cm

An interesting quad variant appeared in Radio Amatori May 92 written by Matti Vilppula OH3AWW. The antenna is two quad loops with a common feed backed by a reflecting screen.

The antenna is simple to make and should have worthwhile gain and front to back ratio. The diagram fig 1 shows the construction and does not really need translation.

The coaxial cable is fed through a tube which supports the quad elements. This provides for adjustment of the quad to reflector spacing and acts as a form of balun to suppress currents on the coaxial cable outer. Adjustment of this spacing affects both SWR and Front to Back Ratio. On 70cm the tube is 15cm long and 20mm diameter. For 23cm try 5 cm long. The cable is RG58 and I would recommend a change to something like 9913 or Heliax as close to the aerial as possible for the run to the shack.

The reflector is a square of mesh or foil or similar and is non critical.

Dimensions are:

Band	70cm	23cm
Loop Sides	17-17.5cm	6cm
Element Dia	4mm	4mm
Reflector		
Size	55cm	25cm
(Square) (h)		
Reflector		
Spacing	10cm	3cm
(a)		

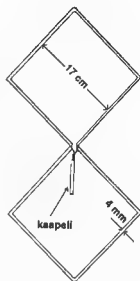


Figure 1A

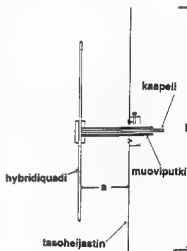


Figure 1B

Figure 1 — Hybrid Quad

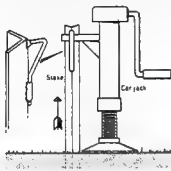
## Guy Rope Anchor Removal

A neat trick to remove guy rope anchor stakes without ruining your back appeared in Pat Hawker's Technical Topics Rad Com Aug 92. The item from Cliffe Sharpe G2HIF concerns using a car jack to remove guy stakes. Cliff welds a hook onto the stake which engages the car jack.



The diagram is self explanatory. Fig 2 Judicious use of bricks under the jack provides sufficient lifting range.

If you have a different type of jack to that shown then a different hook welded to the stake would do the trick.



**Figure 2 — Q2NIP's recommended method of removing stakes from the ground using a standard car jack of the type which has a short arm that plugs into the side of the car.**

III

# Try This - Variations on 24-Hour Theme

**Bernie Ferguson VK3FN**  
96 Glenroy Road  
GLENROY 3046

**C**ONGRATULATIONS to Tony Zuiderwyk VK3ZMP for his 24-hour UTC clock idea.

Quite frankly I did not know 24-hour units existed in this form, and I lost no time chasing one up. Eventually, after much phoning, JAYCAR admitted it had them "on special at \$9 odd".

My approach is somewhat different from Tony's. A little more expensive perhaps. The picture shows how I went about my UTC.

The 12-hour clock I purchased had its unit firmly clipped into position, so

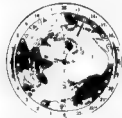
was ideal, as the 24-hour unit is of virtually the same dimensions (some slight differences easily overcome). I wanted to save the face and unit of the clock for EST use in the shack, so removed the face. Anyone wishing to do the same should take care!

The face is attached with double-sided adhesive tape and easily damaged. Believe me, a very sticky job, but thankfully successful. It now chuffs away on the shack wall.

PS: I used rub-on numbers and dots obtained from newsagents.

BT

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# Antenna Handbook

compiled and edited by  
P Linsley G3PDL and T Nicholson KA9WRI/QWOLNQ  
Reviewed by R G Tait VK3UI

**T**HIS EXCELLENT publication features 155 pages crammed full of useful data and practical antenna and test equipment anybody can make at home. The information has been gathered from 68 issues of SPRAT, the official journal of the G-QRP club. This book is essential reading for anybody interested in low power operation.

The book is divided into seven sections, and they are:

1. ATUs and Test Equipment
2. HF Beam Antenna
3. HF Wire Antenna
4. HF Vertical Antenna

## 5. HF Loop and Restricted Space Antenna

## 6. Antenna for VHF Bands

## 7. Appendices

The interesting thing about this book is that it covers the very old antenna to the very new innovations. It features V beams, a variety of magnetic loops, Bobtail curtains, Bruce, Sterba Curtains, Toast racks, Pocket Zepp, Multi bands etc. The list goes on. It is written in very clear and precise terminology; no long-winded mathematical expressions to confuse the less technical among us.

It is considered this book is an ideal companion for the QRP Classics reviewed in a previous issue of AR, as it fills in the gaps and, to repeat that old saying, "If you can't hear them you can't work them."

The review copy was kindly supplied by Stewart Electronic Components of Melbourne. The ordering number is BX452, and the cover price of \$22.50 is very reasonable for this excellent book.

It should be available from your WIA Divisional Bookshop in the near future.

ar

# Amateur Enthusiasm in India

Jan Mitta VK7IR  
88 Lawrie Avenue  
Seven Mile Beach 7170

**H**AVING JUST returned from a two-month working visit to India, one of our many impressions of that complex and interesting country is of the enthusiasm and hospitality of the amateur community.

I was working with the staff of the Government Monitoring Station at Madras; it was very fortunate that the officer-in-charge of the station is Mohanraj VU2AMJ, who acted as a most effective bridge into the amateur activities in the district, providing us with the opportunity to make many new friends. The high spot of these activities was undoubtedly the February 1992 convention at the National Institute of Amateur Radio at Hyderabad.

The NIAR is an impressive organisation which is set to transform the amateur scene with government-supported promotional projects; the enormous requirement nationally for disaster and emergency communications has stimulated this support, thanks to the great PR efforts of Suri, the director of the Institute, and his dedicated staff.

A team of designers at the Institute has produced a range of kits for aspiring amateurs; commercial equipment is very expensive in India, and there is much more incentive to home-brew, though components can be a problem. The kits answer this demand with a choice of single-band receivers and

transceivers which can be upgraded or modified as funds permit; they would be excellent training experience for introducing amateurs to the hobby in any country, perhaps reducing the current dependence on "black boxes".

In addition, club stations have been funded and provided with equipment to carry out educational programs, which will produce a large group of trained people out in the country as young amateurs come through the system. This will generate considerable activity, and will make quite an impression on the air. The program of speeches and sessions was chaired by regular and popular visitor to the convention, Tom King VK2ATJ, who kept speeches to a strict 10 minutes, using a long whip (gently!) to enforce it. XYI. Janet and myself were privileged to be honoured guests and to speak briefly on the Australian scene from our perspective. DX fanatic Valery (Larry) Saldin RA4HA, and Christoph Grandt DL2KAW were also guests. As Janet was the first foreign XYI to attend a convention, she was given the role of presenting trophies to various "young achievers". This went well, in spite of it being a complete surprise.

Many speakers described their activities in all technical branches of the hob-

by and from all parts of the country; a most enlightening experience for us, and there was an exhibition of the new kits and other individual home-brew products. The "flea-market" so popular at such conventions elsewhere is not a feature in India yet; people tend to hang onto any bits they can get, but we were told this would be tried soon.

At the end of a full weekend of activities, and after meeting countless new friends, the foreign guests enjoyed a special dinner with Suri and some of the staff of NIAR. This was typical of the hospitality we received throughout our visit to India, often from complete strangers; it would be nice to repay a fraction of that to visitors from India.

As a small token of our appreciation, we presented a prize for the greatest number of VK7 stations worked before our next convention, hoping that this would help to cement our new bonds with more regular contacts. I am sure any VK station would be valued as a contact . . . everyone knows the Aussie cricket team and recognises Tasmania by David Boon! So, please, if you hear those rather rare VU stations on the bands, give them a call and a welcome; you will enjoy it. Our special thanks go to VU2AMJ Mohanraj, and to all friends in the Madras Amateur Radio Society, who so enriched our experience of their country.

■

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the form on  
the reverse  
side of the  
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flysheet.**

# Resistors to Order

**Robert R McGregor VK3KZ  
2 Whitshire Drive  
Barnersville 2812**

**M**ASS PRODUCTION supplies resistor values from about 10 ohms to 10 megohms in typically third, half and one watt ratings. Unless consistently building minimum or maximum sized gear, a range of half-watt resistors usually suffices. There are the odd spots where a higher wattage is necessary or, say, on a circuit board to distribute the heat released over a wider area. Option one is to place two resistors of twice the value in parallel. Option two is to connect two resistors of half the value in series. These are valid and useful design procedures. However, when using stock values, they do not usually result in a "preferred value".

The third option, especially applicable when more than one watt is required, is to series/parallel units of the final value required. This allows direct replacement of high wattage "preferred values".

A simple rule gives all the information needed; if the number of parallel strings equals the number in series in each string, the final result is the same

as the individual resistors. The dissipation in each one is equal and the total is the sum of the total resistors used.

For example, if we wire up three in series three times and parallel them, the resistance is that of an individual resistor, and the dissipation is  $9 \times 0.5 \text{ watt} = 4.5 \text{ watts}$ . (For  $1/2 \text{ watt}$  resistors). This rule also applies to capacitors and inductances.

It can be desirable to use a series string for other reasons. By this means the shunt capacity across the total resistance can be reduced nearly in ratio of the number in series; handy in feedback circuits around op-amps. For high ratio dividers, a better bandwidth is achieved by using a sufficient number of equal resistors in series; across the output one a carefully adjusted capacity will increase the bandwidth as shown by the improved square wave response. This is handy for "built in" test points for a CRO where using a probe can upset the operating conditions, or a spurious signal that is being investigated.

AR

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# Technical Correspondence

## That Ionosphere Again!

IT IS GRATIFYING to note the interest of Robert VK3XZ in Near Vertical Incidence Skywave (NVIS) transmission in the lower part of the HF band, and also his observations that this type of transmission applies to other low horizontal radiators as well as dipoles (Ref AR Jan 1992 — "Antenna & Ionosphere in Partnership").

However, the section dealing with the radiation resistance of dipoles falling to a very low value as height is reduced applies only above a perfectly conducting groundplane, and is so specified in earlier editions of the ARRL "Radio Amateur Handbook" and the "Antenna Book". Editions from the mid-80s on include in the relevant impedance/height diagram a dashed graph showing the effect above real earth in which the lowest impedance of 45 ohms or so occurs between 0.05 and 0.1 wavelengths, then increases sharply to 90 or 100 ohms at zero levels. This general case can be confirmed in the practical situation with minor variations due to ground conditions and measurement inaccuracies.

This range of impedance matches quite well to 50 or 75 ohm co-axial cable, as appropriate, so no difficulty arises except that the loss resistance tends to exceed the radiation resistance as the radiator approaches zero level and the power efficiency of the communication system rapidly decreases!

The trick is to balance losses against cost in terms of convenience, portability and financial aspects. It is suggested that this balance occurs somewhere close to the height of 0.05 to 0.1 wavelengths quoted above. Unfortunately one cannot compare against a dipole at 0.5 wavelength above a ground plane as it has no vertical lobe, and for 80 metres, for example, requires a mast height of 40 metres!

The loss for a 40-metre dipole two metres above ground surface appears to be of the order of 6 to 8 dB, almost the same as the 7 dB quoted for the 3/4 wave radiator tuned against ground, although on most solid state receivers this looks more like two "S" points than the theoretical one!

Insulated radials or counterpoise can at least eliminate the contact resistance of a ground spike, but do nothing for the poor ground conductivity usually encountered. In fact, the practical real earth should be considered as a lossy dielectric with the losses for a counterpoise approaching those of a ground spike! With 1/4 wave insulated radials on the surface treated as a one-wire transmission line, these dielectric losses are transferred to the low impedance end and add to the input impedance as series losses.

This is the basis for those recommendations for 32 or more radials, and even up to 100 by the American experimenters some years ago trying to achieve a one ohm virtual

## "Little-L" Inductance Bridge for RF Coils

(Continued from page 12)

LX terminals with minimum lead length. However, a pair of clip leads each of 2 or 3 cm should not add appreciable stray inductance for coils larger than about 1  $\mu$ H. No other components should be allowed to remain connected to the "hot" end of the coil during measurement, or significant errors may result.

### Firms

All parts are available from the usual electronics retailers. Near Melbourne, suppliers of radio components include; Stewart Electronics, and Truscott's Electronic World. Both firms will an-

earth! At this point, all portability and convenience are lost, and a complete commercial earth mat may as well be selected. So most amateur portable stations must settle for some considerable loss on the dirty end of the stick! That is, unless there is a desert sandhill, as a perfect insulator, to radiate from surface level as suggested by Tom VK5TL (also in Jan AR).

William A McLeod VK3MI  
42 Capon St  
Chadstone 3148

## Foolnote!

### Response by VK3XZ

I would like to express my appreciation to William VK3MI for enlightening us further on the practical radiation resistance that is realised under average ground conditions for dipoles. No sandhills, thank you, I am not long back from Longreach and, before that, Broome and Halls Creek. I have had my quota for the year, about 9000 km! I do recall now a past trip around Centre, where the driver would open the door of the coach, throw out a crumpled 20/25 feet of wire on to the ground for an aerial, peak it on the Codan's tuning and call base on around 4 MHz, never missed! There is room for investigation; explanation might take longer! Thanks OM!

Robert R McGregor VK3XZ  
2 Wiltshire Drive  
Somerville Vic 3192

III

swer mail orders. Other suppliers of Amidon cores advertise in the Hamads of this journal. Write to me at the address above if you cannot make your bridge work satisfactorily, or require a loan of my inductance standards (SASE please).

## References and Further Reading

1. Radio & Electronic Laboratory Handbook—Scroggie, Newnes Butterworth.
2. Radio Handbook—Orr, Sams (good discussion on bridge circuits).
3. The Handy Inductance Bridge Brumbaugh, KB4ZGC, 73 Mag., May '91.
4. Direct Reading LC Meter—Brown, VK3YGB, AR May '78.

ar

# Mini Equipment Review

Don Platch VK3OM

## The MFJ-910 HF Mobile Antenna Matcher

MFJ seems to be a manufacturer which can produce the right piece of equipment at the right time. One such piece is the 910 HF mobile antenna matcher. This works on the principle that when the usual mobile whip is resonant, the base impedance is anything but 50 ohms. This is where the MFJ-910 comes in. It provides a capacitance divider to match the antenna's normally low impedance (perhaps about 20 ohms) to a 50-ohm line to the transceiver. The 910 is built into a very neat metal box measuring 75mm square by 28mm deep. An SO-239 coax connector is mounted in each end, and

a six-position switch is on the front. There is a mounting flange on either side of the cabinet. The six-position switch gives five matching combinations, while the sixth position is used to bypass the matcher.

## The MFJ910 on the air

I took the 910 along on our Northern Territory expedition and used it with my old Hustler mobile whip system. On 20 metres, the best match that could be obtained by adjusting the length of the whip was 1.5:1. Putting the 910 into the system soon brought the SWR down to 1:1. Side-by-side tests indicated little or no difference in the output signal. However, there is no



doubt that the transceiver was much happier with the correct match. The instruction sheet recommends the matcher should be placed within two feet or less from the antenna. In my case, the closest I could get was nearly two metres, so this could have had an adverse effect on the operation of the unit.

A few points should be noted about the operation of the MFJ-910. It is not an antenna coupler. Its purpose is to match a resonant whip antenna to a 50-ohm load. If you are not using a mobile whip then in all probability you should consider one of MFJ's antenna tuners such as the 945D review also in this issue.

Our thanks to Stewart Electric Components for the loan of our review mobile antenna matcher.

BT

# SOME THINGS HAVE NO COMPARISON

amateur  
**radio**  
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**AT YOUR NEWSAGENT EVERY MONTH**

# A Different Opinion !! Is It Really Amateur Radio?

Harry Atkinson VK6WZ

(Editor's Note — The following item is the author's personal opinions only, and are not those of VK6 Divisional Council, nor individual members .. VK3ABP).

**L**ONG BEFORE you were born — for some of you, long before your parents were born — a famous amateur wrote articles in "QST" about "Rotten Radio". He was Hiram Percy Maxim, the original holder of the call WIAW. Under the pen-name "The Old Man" he attacked attitudes and activities which he saw as detrimental to the hobby.

He didn't attack new techniques as such, but he spoke out strongly against malpractices on the part of a minority of operators. Deliberate QRM — out-of-band operating — bad sending — use and abuse of higher-than-legal power. He held strong views on what the word "amateur" meant. To him it meant the pursuit of the hobby to the best of one's abilities, avoidance of commercialism, the observance of the radio regs and — laugh if you must — gentlemanly consideration for others.

One wonders what The Old Man would think about the ratbag fringe whose vocabulary on our bands sounds like R-rated movie dialogue? Just because some CB operators choose to talk that way doesn't make it acceptable on our bands. Simply on the grounds that there hasn't been a DoTC prosecution in recent years, it doesn't follow we should use pub language in our QSOs.

If he were alive today, Maxim wouldn't be the least bit impressed with

the American operator who, some years ago, bragged he'd blasted the Australian Traveller's Net off the air with his kilowatt of packet if the net didn't QSY. Lovely! As a highly proficient practitioner of the world's first digital mode, The Old Man would probably marvel at and warmly welcome packet radio . . . but we'd expect him to be scathing in his comments on some of the tripe sent out on packet by a minority of immature minds.

How would he react, one wonders, to the sweetheart deals between some sections of our hobby and bodies such as Aussat and others to carry amateur signals to places where, for one reason or another, amateur transmissions cannot reach? At a recent WIA Divisional Council meeting the writer dared to question the use of commercial satellite links for such modes as ATV, packet and JOTA voice traffic, asserting that these arrangements might be an excellent way to secure media publicity for amateur radio but, strictly, they were NOT amateur radio. You wouldn't expect such radical remarks to pass unchallenged, would you? They didn't.

"Did you build your transceiver?" he was asked. The answer, of course, was "no". The implication there seemed to be that if it's okay to use factory-made transceivers, there's nothing wrong in using commercial links to carry amateur traffic. Well, nothing wrong certainly if you take "wrong" as meaning "breaking the law". But isn't it wrong in principle? Isn't it an admission of defeat . . . of inadequacy? Let's see how it stacks up alongside other hobby pursuits.

You're an amateur angler. You catch fish for fun — not for profit. Sure, your fishing gear came from a factory, but you catch your own fish — you don't cadge some from the professional fisherman. You own a yacht — maybe you built it, maybe you didn't. But when you take family or friends out for a sail you don't charge money for it — and you don't expect a tug or a cargo ship to tow you. You use nature's winds and your sailing skills to get you where you want to go and back again. You are a true amateur.

Can you imagine an amateur woodturner passing off professional work as his own just because the task got a bit difficult? Would an amateur artist get a professional painter to finish off every one his pictures?

Justification for these sweetheart deals with commercial bodies was that they encouraged amateurs to "keep up with technological progress". It seems to this writer that continued — even possibly expanded — use of these facilities could actually stifle technological advances. Remember, we have our own orbiting satellites up there. We should be using them for "technological advances". We paid for them. We own them. We are beholden to no-one outside our own ranks. But if we take the easy option of using commercial channels to link amateur to amateur, why bother pouring more time, brainpower and money into the Oscars?

Furthermore, who authorised these groups to place our hobby under an obligation to outside interests and — it seems on the limited and grudgingly given information to hand — without any documented agreements on rights, responsibilities or whatever?

The fact that DoTC when approached on this matter did not raise any objections should not be taken as making it right. Remember, DoTC gets so little revenue from us when contrasted with the spectrum space we enjoy, it doesn't want to be bothered too much with details. In any case, we're talking here about principles, not law. There is a difference. DoTC couldn't care less about amateur tradition — as witness the disgraceful business of the GOD callsign suffixes.

We should not be using commercial facilities. Isn't it better to own your own car than thumb a ride with a truckie? ar

# Try This

Jack Swinger VK3BP  
28 Lording Street  
Ferntree Gully 3186

## Convert Your Hand-Held Into a Base Station

AS MENTIONED in January '92 AR by Ron VK3OM in his review of the YAESU CA-2 desktop stand, hand-helds just don't want to stand up and be counted! When I first came on 2 metres, all I had was my hand-held FT411. Other considerations then became apparent, such as difficulty in reading the LCD readout in many, if not most, lighting conditions. Also, they run very hot when used on the five watt setting. That I didn't like.

If you have not got a speaker/mike accessory it is very awkward trying to talk into it when sitting at the bench, as was the case with yours truly in the early days of my 2 metres work.

Herewith photos of my way around these problems. Made from plywood and metal, all from the junk box. It supplies light and cooling from a swing down lamp and a miniature tape recorder motor running off the 13.8 volt supply via a 100 ohm series resistor.

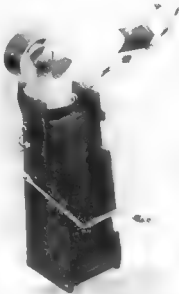
A pivoted "U" shape wire clamp prevents the rig from falling forward.

The fan blade was cut from aluminium shim with scissors.

The tubular elevating stand is not really needed if you have the speaker/mike combination, but I did not have it originally.

The stand as shown will accept the 411 with or without the DC adaptor.

By the way, Doug VK3KMN has, or did have, some 12 volt motors complete with a multi-bladed fan. I am using one of them to keep my Alinco DR110 cool. There is a very convenient 5/32 Whit tapped hole in the rear heatsink, just for fixing a clamp and bracket.



BT

## BOOK REVIEW

# Space Radio Handbook

by John Branagan GM4IHJ  
see ARSB publication

THIS BOOK IS A worthy addition to the already well known RSGB publications, and is cast very much in the same mould. It is authoritative, complete and easy to read.

The author successfully draws together the wide range of topics related to space science and the depth of coverage is more than adequate for the amateur experimenter. His treatment of the ionosphere is one of the best I've read. He spends considerable time detailing the way in which the ionosphere affects VHF/UHF and microwave communication, an area often neglected in other texts, but vitally important to satellite users. There are formulae for those who need them, but the bulk of explanatory material is handled using computer-generated graphics and tables. The book is well indexed and has a useful glossary of terms and addresses.

There are 13 chapters:

### Space Radio Physics 1 & 2:

The ionosphere and near space physical conditions affecting HF, VHF, UHF and microwave propagation.

### Types of Satellites:

Covers just about every known kind of artificial earth satellite from amateur Oscars to killer satellites.

### Orbits and Tracking:

A very comprehensive, easy to follow view of orbital geometry with an historical perspective on Johannes Kepler. Covers all the usual orbits along with problems posed by the Van Allen belt. An interesting account of some rather unusual deep space orbits.

### Satellite Radio Reception:

A practical discussion of problems and solutions associated with reception of weak signals from space.



### **Amateur Radio Satellites**

Historical and technical account of all amateur radio satellites from Oscar-1 to phase-3 and the present generation of digital store and forward micro-satellites.

### **Weather and Experimental Satellites**

Good general explanation of the reception of weather satellite pictures.

### **Experiments in Space Radio**

The longest and possibly most interesting chapter (42 pages). It details many experiments for the amateur or school science teacher. The book is worth reading for this chapter alone.

### **Man in Space**

A detailed look at the manned space programs of USA and LONGER with a special emphasis on their communication problems and solutions.

### **Space Radio Computing**

A comprehensive summary of the computer's role in space communications. Tracking, telemetry, command and control, digital comms etc.

### **Meteors, Comets, Moons and Asteroids**

Discusses the effect of these bodies on the ionosphere and space communications. Good coverage of moon-bounce problems.

### **Amateur Radio Astronomy**

Practical radio astronomy suitable for the amateur experimenter.

### **Future of Amateur Radio in Space**

A bit of crystal-ball gazing.

### **To Summarize**

The book answers many questions for newcomer and experienced amateur alike. It covers a wide and complex field in a very readable and informative way, without resorting to jargon or higher mathematics. It's a good general text on space science and will find a place in secondary school libraries as well as on the experimenter's bookshelf.

**Review**  
by Bill Magnusson VK3JY  
33E Williamsstown Road  
Yerraville 3013

AR

# Australia Celebrates 50 years of Electronic Track Guidance

Rod Torrington VK3TJ

NINETEEN-NINETY-TWO is the golden anniversary of the introduction of electronic track guidance for aircraft navigation on the Adelaide-Darwin route.

In July and August 1942, Ted Betts and myself installed 33 MHz radio ranges at Alice Springs and Daly Waters. The AS facility was not that far removed from its site occupied by the present VOR on the western side of the aerodrome. Both ranges were installed within the period 9-31 July 1942.

These two nav aids were the only guidance that Guinea Airways had between Adelaide and Darwin, an area where VFR navigation can be notoriously difficult. Most acradio stations, however, had Bellini-Tosi direction finders to assist with navigation.

These range transmitters started life as 38 MHz Marker Beacon transmitters, and part of the 33 MHz radio range systems supplied to DCA by AWA. The markers were modified at Essendon to operate on 33.3 and 33.8 MHz, and an extra tray was added to

house the aerial relay power supply and keying motor. The transmitter used valves type 807 in the minor stages, finishing up with push/pull 807s in the final. The aerial system consisted of a vertical half-wave radiator plus two half-wave (nominal) reflectors spaced approximately a quarter wavelength from the radiator, depending on the required bend in the course.

The aerial system was mounted on a wooden structure atop three poles about eight metres high, located in a triangular arrangement.

Fifty years has seen the 33 MHz radio ranges replaced successively by VAR (Visual Aural Range), a four-course system, then VOR (VHF Omni Range), which has a nominal 360 tracks to choose from.

The above item has been reprinted from the Aviation Bulletin, September 1992, and we gratefully acknowledge with thanks their permission to do so .... VK3UV Production Editor.

AR

**Have you advised the WIA Federal  
Office of your new callsign?  
Use the form on the reverse side of the  
Amateur Radio Flysheet.**



# 1992 Remembrance Day Contest Results

Neil Penfold VK6NE, Federal Contest Manager

## CONGRATULATIONS TO VK3

VK3 has again shown a clean pair of heels to the other Divisions. A good effort despite band conditions. Their participation factor was good, and there was some organisation evident.

Comments from operators range over a variety of contest related subjects. Some of these are included as they show just how diverse opinions are on contest matters.

Now to the results.

## Results in numerical order

1st VK3  
2nd VK6  
3rd VK1  
4th VK2  
5th VK5  
6th VK4  
7th VK7

Final Score =  $\frac{\text{No Logs}}{\text{No Licences}} \times \text{Total points} \times \text{WF}$

VK1 51/ 246 x 4569 x 1.04 = 570.21  
VK2 45/5455 x 4755 x 8.47 = 322.19  
VK3 140/4992 x 12720 x 4.59 = 1634.77  
VK4 42/3293 x 4185 x 5.51 = 299.77  
VK5 48/2067 x 6953 x 1.92 = 307.04  
VK6 106/1704 x 10679 x 1.55 = 964.10  
VK7 19/ 645 x 2625 x 2.24 = 176.4

## Individual Scores

HF Phone	HF CW	VHF Phone	VHF CW
<b>VK1</b>			
DX 567	CEE 50	DO 333	DF 36
BR 200	DD 47	DI 211	CEE 31
CEE 153	DH 34	DF 210	RH 23
RH 129	NR 21	KNP 171	KHW 36
KLB 112	DO 20	7ZNP/1 163	DW 13
DF 105	DA 15	KLB 126	
ZX 103	CC 12	ED 114	
KNP 65		CEE 109	
VP 62		DW 94	
DW 59		RH 87	
DO 56		RG 87	
W1 47		KMA 61	
DH 35		KCJ 61	
NR 33		ZQR 52	
PC 22		DA 46	
DT 21		KHW 37	
DI 12		AWH 33	
		OK 30	
		YYZ 28	
		DX 24	
		ACA 21	
		NRU 18	
		VP 10	

HF Phone	HF CW	VHF Phone	VHF CW
<b>VK2</b>			
ARJ 525	EL 100	ANK 66	
BO 420	GS 91	BDT 25	
BUV 389	AWD 83	EY 20	
DCI 306	II 77		
EJW 244	BO 50		
ZL 210	AZR 41		
CJH 206	QF 41		
PS 206	GJS 37		
LEE 161	ED 17		
RE 147	RJ 15		
ANK 146			
CJT 143			
ALZ 124			
NW 118			
JIM 99			
EY 99			
BDI 66			
XT 59			

BYV 50  
AIC 48  
PEJ 45  
GSU 42  
FBN 41  
WF 40  
GV 28  
GT 27  
SW 22  
NCE 21  
SBS/2 20  
CF 17  
PY 12  
RJ 11

HF Phone	HF CW	VHF Phone
<b>VK3</b>		
DDU 450	SM 67	DP 203
FR 303	BMK 60	FC 106
DDX 278	LBA 59	XB 71
JTY 227	EUZ 59	JJA 67
BHU 213	OZ 49	DVW 66
BML 220	ABB 46	ANJ 45
TU 205	NFJ 43	KS 39
DUQ 204	DY 41	WEG 38
CX 161	SV 47	IY 34
YH 160	AEB 34	DNC 31
AEO 154	KRH 33	AMD 30
JTW 153	DRX 32	DRX 32
DS 151	WEG 32	DG 25
ALK 151	HJ 32	XF 22
APC 151	VQ 31	AL 17
AHY 145	DNC 31	VB 15
DD 140	DYF 30	BML 11
ALM 123	VKG 29	
ENX 123	CRA 26	
CAY 123	PQ 25	
ZI 118	ABP 25	
JK 115	DG 22	
AKK 115	CKH 22	
XF 113	ALD 18	
EUL 103	DET 17	
RC 102	AWZ 17	
DCS 100	IY 17	
MGZ 100	KTO 16	
ATJ 97	NV 16	
OM 93	ALJ 14	
ANP 93	AGH 12	
		APC 532
		AYF 376
		KSD 361
		NJE 248
		AEB 247
		YMC 241
		ALM 205
		JUD 201
		ITA 198
		ZNE 184
		BFN 143
		FG 29
		III 126
		ALJ 119
		JK 118
		AEO 118
		BML 115
		HJ 110
		XDV 101
		CAP 98
		IP 96
		XEC 93
		SM 80
		CKH 79
		CAY 77
		CRA 71
		DD 70
		WWW67
		YZW 65
		WEG 57
		DG 54

UJC 79 IP 12 BII 50  
INCO 75 AMD 10 KBD 45

III 74  
KSD 72 Check Log  
BFN 68 VK3KF

**VHF CW** — No Logs submitted from VK3  
HF Phone HF CW VHF Phone VHF CW

**VK4**  
HF 579 LV 141 No Logs  
LT 323 OR 127 ~~Submitted~~

AAF 254 XW 117  
BTW 239 CI 93  
IS 231 OD 62  
BBA 219 XA 37  
DRC 204 BRZ 33  
KEL 127 RE 27  
DI 117 ZW 111  
AQD 106 YG 13

ZT 90  
PS 89  
YG 88  
AAK 80  
PJ 77  
OD 63  
WIT 60  
ACW 57  
ZW 57  
MUY 50  
BSH 50  
AGL 50  
EZ 43  
MDG 38  
AAH 38  
CD 37  
FUY 36  
WRM 32  
BF 30  
OX 27  
BG 15  
KIG 10

HF Phone HF CW VHF Phone VHF CW

**VK6**  
ADD 542 CJP 100 AGX 126 TTY 531 No Logs  
ATU 379 ST 76 HO 78 DL 450  
AYD 377 BVJ 75 TL 33 BKC 415

BRC 352 ZX 70 JG 22 AKK 202  
ARC 344 PC 63 FX 20 BW 171  
CN 250 ZQ 50 YL 20 SE 83  
EE 219 BWG 44 RV 67  
ATN 179 NEI 36 NEI 62  
GN 146 RK 30 GN 61  
BWH 141 NF 27 XY 55  
APC 138 ANW 20 ANW 41  
RV 116 KJT 16 PC 40  
WO 115 MCG 14 SUK 38  
XY 107 CKP 14 ZKK 35  
UE 101 KJA 34

HF Phone HF CW VHF Phone

**VK8**  
SZ 565 GGA 70 AFW 134 KS 441 THR 55  
WJH 459 QN 70 AJ 75 ZDW 264 NE 50  
ANC 425 TTY 63 IV 60 SH 222 SMH 50

BK 374 SMH 60 BEB 45 ZLZ 212 RO 43  
JBL 300 FRE 55 BW 37 RG 217 JRL 42  
ED 248 SAA 50 WT 14 YF 211 FJA 35  
RG 225 GW 50 ED 14 XPS 206 UV 32  
BA 218 KAD 47 CX 206 KTN 27  
VZ 205 RZ 45 SAA 199 IV 26  
JP 197 PAK 33 HU 175 MCB 26  
VSD 173 NKB 27 SAN 174 MB 26  
AMB 150 AN 26 JIP 154 FC 25  
YF 139 KWN 26 GGA 147 ANC 25  
RU 136 MM 22 ZPP 135 APK 25  
LZ 130 UW 22 PDR 128 HK 21  
ABS 112 WU 20 KWN 120 FRE 20  
WJA 102 OV 14 AMB 118 RZ 15  
SCS 97 AO 11 BW 115 RU 15  
GGD 92 HD 10 CC 115 WT 14  
OE 75 PDR 10 BWI 110 KXK 12  
KH 75 APK 10 ZBP 98 AO 10  
HU 74 KTN 11 KAR 83  
RRG 74 AN 83  
SH 72 ON 66  
SAN 72 NEB 65

VHF CW

**VK7**  
PC 454 RY 51 ZBK 178 No Logs  
CK 349 GB 23 ZMF 67 Submitted  
SHV 263 RK 13 GL 62  
KC 255 YW 49  
NDO 208 MAT 40  
VK 94 RM 38  
NGC 87  
HK 75  
JP 70  
AL 63  
PP 60  
YW 46  
LS 28  
NBF 20  
ASN 20  
RM 12

**VK8**  
AV 306 HA 86  
NUE 25 AV 55  
**ZL**  
IBGT 242 2ALJ 82  
2ADN 170 IBGT 12  
ZTT 148 2TT 8  
IAGO 106  
HIM 124

HF CW VHF Phone VHF CW

**VK9**  
PC 454 RY 51 ZBK 178 No Logs  
CK 349 GB 23 ZMF 67 Submitted  
SHV 263 RK 13 GL 62  
KC 255 YW 49  
NDO 208 MAT 40  
VK 94 RM 38  
NGC 87  
HK 75  
JP 70  
AL 63  
PP 60  
YW 46  
LS 28  
NBF 20  
ASN 20  
RM 12

**VK9**  
PC 454 RY 51 ZBK 178 No Logs  
CK 349 GB 23 ZMF 67 Submitted  
SHV 263 RK 13 GL 62  
KC 255 YW 49  
NDO 208 MAT 40  
VK 94 RM 38  
NGC 87  
HK 75  
JP 70  
AL 63  
PP 60  
YW 46  
LS 28  
NBF 20  
ASN 20  
RM 12

**VK9**  
PC 454 RY 51 ZBK 178 No Logs  
CK 349 GB 23 ZMF 67 Submitted  
SHV 263 RK 13 GL 62  
KC 255 YW 49  
NDO 208 MAT 40  
VK 94 RM 38  
NGC 87  
HK 75  
JP 70  
AL 63  
PP 60  
YW 46  
LS 28  
NBF 20  
ASN 20  
RM 12

**VK9**  
PC 454 RY 51 ZBK 178 No Logs  
CK 349 GB 23 ZMF 67 Submitted  
SHV 263 RK 13 GL 62  
KC 255 YW 49  
NDO 208 MAT 40  
VK 94 RM 38  
NGC 87  
HK 75  
JP 70  
AL 63  
PP 60  
YW 46  
LS 28  
NBF 20  
ASN 20  
RM 12

**Receiving Section**

HF Phone VHF Phone

**VK1VH**  
VK6 — P Kenyon 235  
VK6 — L60250 33  
VK6 M Ang 14

## Comment from the Logs

Conditions changeable with heavy QRN on 3.5 and 7 MHz bands. The majority of operators exercised great patience during exchanges. But some so-called "experts" at excessive speeds. Let us keep our contest friendly. Nothing heard on either 21 or 28 MHz. Was it the only one? Looking forward to next year. VK5AGX.

Time wasted scanning 28 MHz. No signals heard 21 MHz, one contact, heard VK8AV, ZL2ALJ, but they were gone before I could change antenna equipment from 14 MHz. Stuttering fists and gummed up keys keep scoring down. Too many RST reports, ignorance of rules. Rag chewing wasting time. VK4XW.

The RD contest always had a special significance for me. I think of it as our "Anzac Day" of the air. It's a place where old friends meet. Hopefully we will meet again next year in friendly rivalry. VK4BAY.

Regarding restriction to VK, ZL and P29 callsigns, reason that rules are directed towards "amateurs who died during WWII". This is against the aim as published. Were not the USA and England etc, also involved in the south-west Pacific area? Surely discriminating against those "other" amateurs who also died in our area? VK1PJ.

The RF seems to be dying in VK5, participation, particularly on 2m, seems less and less every year. Many people have said to me, "It's not like the old days when interstate points counted for something". Can't we go back to the "old ways" or a new "revitalised version" before it dies out altogether. VK5ANW.

Enjoyed the contest. Good manners prevailed. Missed a few well known calls. VK4IS.

I worked a total of 156 VK stations more than I have worked in the past 32 years on the air. ZL2TT (ex VK4DRW).

I found the contest enjoyable with quite a lot of activity. Nice to hear old friends and work new amateurs. VK6YF.

After a lapse of 10 years since participating, it really was enjoyable and an excellent way of keeping my CW capability for the rest of the equinox on six metres! Lest we forget. VK2QF.

Enjoyed the contest. As usual, all operators were friendly and patient. This is a good contest over the 24-hour period. Nice to have rules in Break-In magazine. ZL2ADN

Again an excellent contest. Conditions not as good as in recent years. Not one novice contact on CW, and not many on 80 and 15 phone. Only one contact on 28, and the VK8 beacon was pounding in.

Without the old point scoring system, all contestants showed greatly improved operating manners, eg QSY" after numbers were given. A jolly good contest. VK2BQ.

We enjoyed six hours operation of local club station. Additional contacts, own call-sign, from home on Sunday. Much enjoyed the contest, other operators friendly and courteous. Thank you for your part in making this tie of remembrance a special day for amateur radio operators. VK3OZ and VK3VB.

My first RD contest and first use of Iambic Paddle outside of practice sessions. VK2YL.

I was available only on Saturday, and usually use CW only in this contest. Having filled a page with HF/CW, I had a couple of bursts on VHF phone and then fired up on HF phone. Hence three logs! Contest seemed as busy — or better than — other years. 73. VK3AMD

Single operators seem to be fading away in favour of club stations. VK6QN.

Good propagation on both 80 and 40 but 15 was poor and 28 non-existent. Mel-

bourne and district stations on VHF rack up a lot of points for Victoria, not shared with another state. Has there been a change in the number of HF and VHF participants in years Victoria has won the contest? Thank you for being the co-ordinator. VK3FR

## Federal President active in RD Contest

The WIA Federal President, Ron Henderson VK1RH, took time out from his voluntary WIA duties, and participated in this years' Remembrance Day contest. Ron was very active and he submitted three log summaries. On HF, he used a FT747 with G5RV and TH3JR antennas (tuned through a MFJ 910 ATU). On VHF he used a FT290R, 4 element yagi and a G0BSX Mk1 TNC with a dumb ASCII terminal cast off by a credit union. ar



**Help stamp out stolen equipment — keep a record of all your equipment serial numbers in a safe place.**

# ALARA

Robyn Gladwin VK3ENX PO Box 438 Chelsea Vic 3196

## "Radiomania"

Marilyn Syme, VK3DMS, has been working on stamp collections and entering them competitively for some years. Two years ago, she decided to put together her collection on the history of radio and its use by amateurs. This type of collecting is known as "thematic" and is probably the most difficult form of philately. Last year, Marilyn won a Silver medal at a State competition in Melbourne and this encouraged her to enter the National Exhibition Stamp Show '92 in Brisbane in June.

This time, her "Radiomania" collection of stamps, covers, telegrams and other philatelic memorabilia won her a Large Silver medal. She was also given a special encouragement award for the most improved thematic exhibit by the Thematic Society of Australia a two volume set of books depicting our Australian Wilderness full of wonderful photographs.

Marilyn enjoys combining her two hobbies. She has plenty of ideas for expansion but it is not easy to find the right items. She would like to include a section on Alf Tragger and the pedal radio but is finding difficulty locating suitable materials.

## ALARA Awards.

This month, ALARA members join with the editorial team of "Amateur Radio" to acknowledge the contribution of all women amateur radio operators and short wave listeners to the hobby of amateur radio. Bron Brown, VK3DYF, Jenny Warrington, VK5ANW, and Poppy Bradshaw, VK6YF, are pictured receiving their respective awards for outstanding service to ALARA. However, they are also to be congratulated for supporting and representing women in other fields of amateur radio.



Bron Brown VK3DYF with her ALARA award presented at the ALARA VK3 birthday lunch, 26th July 1992.



Poppy Bradshaw VK6YF with her ALARA award at the Westral Centre, Perth, during the Radio Ladies lunch on 24th September 1992.



Jenny Warrington VK5ANW receiving her ALARA award at the VK5 ALARA birthday luncheon, 26th July 1992. In the photograph are from left Myrna VK5YW Foundation Member (seated), Jenny VK5ANW, Christine VK5CTV, and Mary VK5AMB.

**Help protect our  
frequencies —  
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watcher today**



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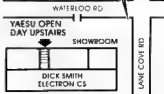
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Cat D-3494



**\$569** With Bonus



Purchase an FT-212RH in November and you'll receive **BONUS** Dick Smith Gift Vouchers Worth \$70! You can use them yourself for future purchases or even give them as gifts (great for Christmas). But hurry this offer expires 30th November '92.



### FT-47GX COMPACT H.F. TRANSCEIVER

The FT-47GX is a compact SSB/CW/AM and optional FM transceiver providing 100 watts PEP output on all 1.8-30MHz amateur bands and general coverage reception from 100kHz to 30MHz. Convenient features include a front panel mounted speaker and an easy to read backlit digital display, dual operator selectable tuning steps for each mode, dual VFOs for split frequency operation and 20 memory channels (a selection of which can store split Tx/Rx frequencies). Wideband 6kHz AM and narrow 500Hz CW/F filters are also a standard feature. Complete with Yaesu MH-1 hand microphone.

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**COMING SOON!** Remote front panel mounting kit for FT-47GX. Great for HF mobile operation where space for full size rig is limited.

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### FT-650 6m, 10m, 12m ALL-MODE TRANSCEIVER

Yaesu's FT-650 is a 1-mode mobile transceiver has been designed with the 6m enthusiast firmly in mind. With continuous reception from 24.5 to 56MHz you can follow the rising MUF and work the 6m DX as soon as the band opens. Output is a powerful 100 watts on the 24.5, 28 and 50MHz bands (SSB, CW, FM), and the use of 3 Direct Digital Synthesizers results in extremely clean Tx and Rx operation. Particular attention has been made to the receiver's performance with 6 Band Pass Filters and a 2 stage, low noise RF Amp being used to provide exceptional sensitivity (SSB/CW: 0.125uV) and wide dynamic range. Includes user selectable tuning steps, manual or automatic tuning IF Notch filter, an IF Shift control for interference rejection, an IF bandwidth control, 105 scannable memories, an RF Speech processor and an effective noise blanker. Includes Yaesu MH-1 hand microphone.

Cat D-3250



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# AMSAT Australia

Bill Magnusson VK3JT 359 Williamstown Road Yarraville VIC 3013

Packet: VK3JT@VK3BBS

## National co-ordinator

Graham Ratchiff VK5AGR

Packet: VK5AGR@VK5WI

Please take note of the AMSAT information nets:

## AMSAT Australia net:

Control station VK5AGR

Check-ins commence at 0945z on Sunday nights Bulletin commences at 1000z

## Frequencies:

Primary 7.064 MHz. plus/minus 5 kHz.

Secondary 3.685 MHz.

AMSAT South West Pacific net:

2200z Saturday on 14.282 MHz.

Experienced satellite users and newcomers alike are welcome on the nets. A large body of experience is on hand to answer queries. Listen to the WIA divisional broadcasts for regular up to date AMSAT information.

AMSAT Australia newsletter and software service:

Satellite users whether experienced or newcomers will benefit by subscribing to the AMSAT Australia newsletter and software service. The newsletter is published monthly by Graham VK5AGR. Subscription is \$25 for Australia, \$30 for New Zealand and \$35 for other countries by AIR MAIL. It is payable to AMSAT Aust. addressed as follows: AMSAT Australia  
GPO Box 2141  
Adelaide SA 5001

The newsletter provides up to date information on all current and planned amateur radio satellite activities. Graham also provides a first class soft-ware service for satellite users. New soft-ware is reviewed regularly in the newsletter.

## MIR report

The erratic signal strengths from MIR remain a mystery and it seems they are having some problems with the TNC. Many repeat packets are seen and it has been difficult to have a complete un-interrupted connect or digipeat. They are aware of the problem and hopefully a fix is not far away. One would have to say that the signal strength is not a patch on what it was a year or so ago. The most likely cause is shading of the antenna due to structural changes and additions to the spacecraft. Signals can peak up to S9+, but only for very short periods.

## New tracking software, STSBORBIT PLUS

This program is currently doing the rounds of the BBSs and is definitely worth a look. It comes as a zipped file called SOP9218.ZIP (300K) and can be expanded using pkunzip. It expands out to 533K. It is public domain free ware.

It was designed to produce a map and details similar to the large wall screen we are all familiar with at NASA/NORAD mission control centre and is the result of much hard work by several people associated with NASA and feedback from within the organisation itself. It is used on their own PCs in the control room.

The graphics display is similar to IT, QT, GT etc and it contains many excellent features (and several short comings for amateur radio use). The map uses circular equidistant projection similar to IT but it does not require a fancy graphics VDU to work. It will work on Hercules, CGA, EGA and VGA on colour or monochrome. It gives a very useful display in monochrome (but of course it's much prettier in colour).

The features include a very detailed world map with "zoom in" facilities. It draws the satellite footprint and the circle of visibility of the ground station. It draws the ground track for 90 mins before and 180 mins after the current satellite position. It works in real time or can be put into fast forward or reverse with adjustable time steps. You can load in current 2 line keeps from a BBS and it contains a massive (103K) data bank of nearly 700 commercial and amateur satellites.

It shows features such as the "South Atlantic anomaly", a region where the Van Allen radiation belt drops to a very low altitude and can interfere with low earth orbiting satellites. It displays all NASA NORAD tracking stations around the world and the orbit positions of the NASA global geostationary data relay satellites. You can set your own lat/lon co-ordinates or use the nearest city.

It has some drawbacks from an amateur radio point of view. It's important to remember that this program was originally devised to work with the STS shuttle missions and these are all low inclination, almost circular orbits. There appears to be a problem with the footprint algorithm when dealing with satellites in highly elliptical orbits.

It draws "ghost" footprints when satellites approach the polar regions and it tends to over-estimate the area of coverage. It is VERY slow without a math co-processor. Once the map and details come up on the screen it works satisfactorily enough to be useful but it takes a long time to draw that map and redraw it for zoom etc.

As an example on my old XT which has a co-processor it takes about 30 seconds to draw the map, do all calculations and position all other info on the screen. Without the co-processor it takes some minutes just to draw the map. On a fast 486 it does everything almost instantaneously and responds to all commands in a flash. It does not have the capability to drive a set of antenna rotators like many of the current amateur radio programs do.

It could not be construed as a replacement for Instanttrak or Quiktrak as these are amateur radio programs specially written to meet amateur radio needs. STSBORBIT PLUS lacks features like next rise and set times, transponder schedules, squint angles, text screens, mutual co-visibility, multiple observers etc, all of which are important to amateur satellite operators.

Despite this it would be just the bees knees for space shuttle QSOs as it has a "mission elapsed time" read out (MET). This is a great feature when pre-arranged QSOs are coming up or to work out exactly what the crew could be expected to be doing at any time during the mission. It would have been good to have this program running on a machine alongside Instanttrak on the occasion of our radio club's scheduled QSOs with the shuttle. As well as MET you can see at a glance whether the next pass will be available at your QTH by looking at the ground tracks.

The documentation is massive. It has on screen help, a "quick help" document to help you get going and a very detailed 60 page document file.

The map data base is so detailed that it is archived and has to be unzipped each time the map is drawn. This and the very accurate maths is what takes the time on a slow machine. If you come across this program, run it up and have a look. I think you'll be impressed. If you run a 486 you'll certainly be impressed.

## Earthwinds project:

This manned, round the world balloon voyage was postponed last year due to inclement weather conditions during the launch window. It is again scheduled for launch this month. Unfortunately it won't be carrying any transpondering equipment. It will however be carrying a 10 metre beacon transmitter and it will be an interesting tracking exercise. It should be rather like



an extended version of one of the recent spate of local balloon launches here in VK/ZL. These were followed by many satellite enthusiasts.

This is a much more ambitious project but it is intended to be of main interest in the northern hemisphere as it will be using the northern jet stream to drift right around the world. Since the beacon is on 10 metres we may hear it from time to time. The beacon will be on 28.303 MHz. Using the call sign KB7JGM it will transmit digitised voice readout of the balloon's latitude, longitude and speed in knots. It will transmit at 15 and 45 minutes past the hour and possibly at 30 and 55 minutes past the hour if power budget permits. Transmit power will be between 10 and 100 watts, again depending on available power.

The balloon will be flying at about 35,000 feet and the journey is planned to take from 11 to 22 days depending on wind speed. Larry, KB7JGM may make contacts during the flight but these will definitely NOT be made on the beacon frequency. Using the jet stream winds the intended flight path will take the balloon across the Atlantic ocean, western Europe, Russia, Japan, the Pacific and back (hopefully) close to the launch site.

EE

## A Call to all Holders of a Novice Licence

Now you have joined the ranks of amateur radio, why not extend your activities?

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11am to 2pm Monday to Friday  
7 to 9pm Wednesday

## Club Corner

### V17AJT, Special Event Station

The Special Event callsign V17AJT has been issued to commemorate the discovery of Tasmania by Abel Jansen Tasman 350 years ago.

Tasman, aboard the HEEMSKIRK" and in company of the "ZEEHAN" sighted the West Coast of Tasmania on the 24th November 1642.

The special event callsign will be used at various locations around Tasmania for the month of November, but will be on the West Coast on the actual anniversary date of the discovery, viz 24th November 1992.

An award will be available to amateurs working this station.

See "QRM from VK7" in "Divisional Notes" for further information.

Frank VK7ZMF  
Co-ordinator

### Western and Northern Suburbs Amateur Radio Club

The WNSARC held their Hamfest on 30th August 1992, and a most enjoyable day was had by all. Over 350 visitors attended the Ham Fest. It was especially pleasing to see the support from the amateur traders, and AR advertisers, in particular ICOM, Dick Smith Electronics, Stewart Electronic Components, and ZRV Electronics (Drake). They all contributed with colorful stands and provided excellent service and information.

The Melbourne Packet Radio Club under the direction of Peter Hallgarten VK3AVE, provided an excellent display of Packet Radio.

Slow Scan ATV was also demonstrated by John Wilson.

The flavour of the Ham Fest centred on being a "family" involvement day, and in particular involving the ladies. Many old and new acquaintances were made, and everyone attending were looking forward to next year's Ham Fest.

73 from Tom Page VK3AGH  
Secretary WNSARC

Pictured in front of the WICEN Communications stand are from left Jamie Baker VK3KPU, Bert Noren VK3BN, Werner Wulf VK3BNW, Tom Page VK3AGH, John Webb VK3ZVX.



### Westlakes Amateur Radio Club

Club Information update.

Westlakes Amateur Radio Club, PO Box 1, Teralba NSW 2284. Open each Saturday afternoon and Tuesday evening.

Club callsigns are VK2ATZ and VK2ZL. Voice repeaters VK2RTZ 146.775, VK2RZL 147.100 Dupleater VK2RPN 147.575.

Club nets each Thursday on 146.775 MHz at 2000k, each Saturday on 3.588 MHz at 0600k, and on 146.775 MHz at 0800k.

Weekly broadcasts each Sunday on 146.775 MHz at 1000k and 2000k. Broadcast in CW each Sunday on 7.070 MHz at 1300k, callbacks follow.

Amateur examinations held each three months

Chairman Rod Freedman VK2WO.

Membership enquiries to (049) 58 1588.

Greg Smith VK2GJS

Acting Secretary

### **Coral Coast Group 25th Anniversary**

On the 28th September 1992, the 25th anniversary of the Coral Coast Group took place. A net which has been running continuously for 25 years. It initially comprised of the following stations: VK4LZ, VK4BQ, VK4XZ, VK4ZW, VK4GR and VK3QZ, starting each morning at 0700am, seven days a week on 7.060 MHz.

As at 26th September 1992, the Coral Coast net has made 105,804 contacts with 1,286 different call signs and 55 different prefixes. Including two aeronautical mo-

biles, two tractor mobiles, and numerous maritime and motor vehicle mobile contacts.

The indigenous net controller is Les Bell OBE, VK4LZ, Airlie Beach, QLD, whose wife Bertha efficiently keeps the station log, and handles the statistics.

Les Daniels VK2AXZ

### **Mackay Amateur Radio Association**

Meetings:

Activities evening 1st Friday each month, 1930k at the SES building, Swain St, North Mackay.

Club Net: VK4WIM/P

Friday 1945k, 147.000 repeater

Monday 1930k, 3.597 MHz (+/- QRM) (Note: Daylight Saving time does not apply in Queensland)

Club Repeaters:

Two metres

Voice — VK4RMK Tx 147.000, Rx 146.400 MHz, HASL 320 metres ERP 25W. Good coverage Mackay area.

Packet — VK4RMK 144.900 MHz, same location/power as voice repeater.

Packet — VK4RZM 144.900 MHz, location 30km ENE of Nebo, HASL 800 metres, ERP 25W. Links Mackay/Central Highlands, thence Rockhampton and South 70 centimetres

Voice — VK4RMU Tx 438.125, Rx 433.425 MHz, HASL 40 metres. ERP 75W. Horiz Polarised North/South from Andergrove (North Mackay).

Warwick H Lake VK4AP

Secretary

### **Moorabbin and District Radio Club**

Please note that all mail should now be sent to the club's new mailing address, viz: -

The Secretary  
Moorabbin and District Radio Club  
PO Box 58  
Highett Vic 3190

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## **BOOK REVIEW**

# **Amateur Radio Technical Abstracts. Volume 1, 1991**

Editor: Graham Thornton. VK3IY.

ISSN 1036-3025. Thornton Publishing. PO. Box, 298, World Trade Centre, Melbourne. 3005. Australia.

16 Chapters, 123 A5 pages.

Prices: Victoria: A\$32.00, Australia: A\$32.65, Asia/Pacific: US\$24.75,

USA/Canada: US\$25.00, Europe/Africa: £13.50 (Surface Mail).

Reviewed by: Bruce R. Kendall. VK3WL.

Many individuals, clubs, and libraries have collections of technical magazines that often contain some very worth while articles. The problem is finding out: a-what type of articles they are, and b-what topics are covered in any given publication. Admittedly some do provide an annual or continuous index service, but this necessitates looking up multiple indexes, if they are available.

ARTA is a publication that lists individual articles from the best amateur radio and hobby electronics magazines by subject and author. The book is divided into chapters with such headings as: Amplifiers, Antennas, Satellite equipment, and Transceivers. Entries appear in alphabetical order by title and include the authors name, the publication that it appears in along with relevant

issue number, dates and page numbers concerned. A series of abbreviations then tell the reader what in the way of circuit diagrams, component layouts, mechanical drawings, illustrations, or art work, etc., are included in the particular article. A concise summary is then provided to give an overview of what each article is actually about. This is done as all to often the title is not the best indicator of what is really being discussed by the authors.

Additional appendices include: a glossary of acronyms and abbreviations used in amateur radio, and an authors index.

Periodicals abstracted include: Amateur Radio, Electronics Australia, Elektor Electronics, Everyday Electronics, Practical Wireless, QEX, QST, QST Canada, Radio

communication, Radio ZS, Sprat, and 73 Amateur Radio Today.

With nearly 1000 entries, being case bound and printed on high quality acid free paper, a planned five year cumulative index, and mailed direct to any where in the world, this book is a must for radio or electronics clubs and societies, educational institutions, public, and private libraries. And at this price it will not preclude the individual from owning a copy.

Amateur Radio Technical Abstracts is recommended to anybody with a collection of technical magazines, or where one wishes to source copies of particular articles from a magazine publisher or local library, as both of the above usually provide a photo copy service.

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# AWARDS

John Kelleher VK3DP — Federal Awards Manager

## The Tasmanian "Devil" Award for Overseas Amateurs

Tasmania, the island state of Australia, has many unique features. The "Devil" award is named after one of these.

### To Qualify

It is necessary to make contact with a certain number of different VK7 amateurs, depending on your location. Contacts may be made on any band or mode available to you in terms of your licence and need not be made on nets.

Oceania and Antarctica	30 contacts
North America and Asia	20 contacts
Europe and South America	10 contacts
Africa	7 contacts

### To Claim

Claim logs, with applicant's name, address and callsign to show station contacted, date, time, band and mode and signal reports exchanged. The claim to be signed by applicant (no counter-signatures are required). QSL cards are not required. A fee of AUD\$3 or equivalent to cover cost of award and postage is required.

### Applications

Log extract and fee should be sent to the Award Manager VK7NBF, A R Jackson, Falmouth, Tas 7215. Any contacts made since 1 January 1978 are valid.

## Central Coast Amateur Radio Club Award

The qualifications needed for the Central Coast award are as follows:

1. Overseas operators must contact two Central Coast stations or the club station (VK2AFY or VK2EH).
2. VK operators (other than those residing on the Central Coast) must contact four Central Coast stations plus the club station (VK2AFY or VK2EH).
3. Central Coast operators must contact 10 Central Coast operators plus the club station (VK2AFY or VK2EH).
4. Short-wave listeners must log two-way contacts in accordance with the conditions of 1, 2 or 3 above.

A Central Coast station is one being operated:

- (i) by a member of the Central Coast Amateur Radio Club Inc (even if the member resides outside the boundaries of the Central Coast);
- (ii) by a person who resides on the Central Coast who is not a member of the CCARC Inc;

- (iii) in a portable capacity on the Central Coast;
- (iv) in a mobile capacity on the Central Coast.

The Central Coast is defined as that area bounded by the boundaries of the City of Gosford and the Shire of Wyong combined.

The postcodes for the Central Coast are: 2250, 2251, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263.

A copy of log entries, certified by the operator and one other amateur operator, must be submitted to: The Awards Manager  
Central Coast Amateur Radio Club Inc  
PO Box 238  
Gosford NSW 2250  
Australia

## Awards Profile



### Peter Forbes VK3QI

First licensed 1967 as VK3QI  
QTHs Box Hill (Melbourne) 1967-1971  
Swan Hill 1972-1975, 1982-1984  
Lake Boga 1976-1981  
Glen Iris (Melbourne) 1985-present

### Interests in Amateur Radio

Propagation (especially chordal hop)  
HF antenna design and HF band DXing  
160m DXing (47 US states, 55 countries)  
196kHz LF propagation as AX3T36 experimental licence

### Current DX Scores

Mixed 323/333  
Phone 323/332

CW 316/323 (have worked 320, but await four confirmations)

### Notable Awards

#### Current Band Scores

5 Band DXCC 10mx 260 20mx 323 160mx 55

5 Band Worked All Zones 15mx 293 40mx 230

5 Band Worked All US States 17mx 170 80mx 173

## Equipment and Antennas

TS430S transceiver with built-in keyer  
MA1000B (400 watts PEP output) 12 volts DC solid state.

The station is run from a 110-amp-hour 12-volt battery supply, either solar charged or trickle charged from a battery charger.

## Antennas

Werner Wulf four-element tribander up 50 feet

Two-element 17m yagi up 42 feet

Quarter-wave slopers for 80, 40 and 30 metres

Shunt-fed tower for 160 metres

## Tips to being a successful DXer

1. Listen, listen, listen, .....
2. Understand ionospheric propagation
3. A sharp CW filter (250Hz)
4. A good network of DX information sources
5. Never expect to work a new and rare DX station on a net (I have never worked an all-time new one on a net!)
6. Be prepared to operate at inconvenient times for Australia, which are convenient times for the DX station.
7. Listen, listen, listen, .....

## Best ever DX

EP2BQ (Iran) and several European countries on 160 metres.

## Occupation and Other Interests

Age 43 — teacher of physics and mathematics Golf, badminton, tennis and supporting the Melbourne Football Club, house renovations and extensions, computers.

nr

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Phone: (03) 548 2594

Fax: (03) 547 8545

# Contests

Neil Pentfold VK6NE Federal Contests Manager  
2 Moss Court Kingsley 6026

## Contest Calendar

November  
8 OK-DX. M  
28-29 CQ, WW, CW, CW  
December  
5-6 ARRL 160m, C  
6 Special: Independent Finland 75  
years anniversary contest 24 hours  
12-13 ARRL 10m, M  
20 Ross Hull 1991/92

## Independent Finland 75 Years Anniversary Contest

The Finnish Amateur Radio League (SRAL) has great pleasure in announcing a special event contest for celebrating the 75th year of independence of the Republic of Finland. This special occasion will be held on Sunday 6 December on the day of independence.

The aim of this contest is to establish as many friendly contacts as possible between the OH operators and the rest of the world in celebration of this special occasion. The Finnish stations can be identified by their OH and OG prefixes.

### 1. Contest Period

Twenty four hours, 6 December 1992 from 0000 UTC to 2400 UTC.

### 2. Bands and Modes

Eighty, 40, 20, 15 and 10-metre bands, CW and SSB simultaneously. The Finnish stations will operate in the vicinity of the following frequencies: 3525, 7025, 14025, 21025 and 28025kHz and 3775, 7075, 14225, 21325 and 28525 kHz.

### 3. Categories

- a: Single operator, multi-band
- b: Single operator, single band
- c: Multi operator, single TX
- d: QRP stations, multi-band (max 5W output)
- e: SWL

### 4. Contest Exchange

RS(T) and serial number, starting 001. OH/OG stations will be giving RS(T) and a three-digit OHC number. OHC is the Finnish county number.

### 5. Points

Every valid QSO is one point. Same station can be worked once on CW and once on SSB per band. The CW and SSB contacts must be made on appropriate sub-bands.

### 6. Multipliers

Each OHC number (Finnish county) is a multiple once in the contest. Additionally, 10 special event FIN-suffix stations (eg OG1FIN, OG2FIN etc) will be activated. Each FIN station gives five extra multipliers on each band.

### 7. Scoring

Total QSO points x total multipliers = final score.

### 8. Logs

All times must be UTC. The multipliers (OHC numbers and FIN suffixes) need to be indicated once per band. An entry with more than 300 QSOs must include a dupe sheet.

### 9. Awards

Certificates and special prizes will be awarded to top scorers in each category. Each DXCC country and US and Japan call-area winner will be awarded a special certificate.

### 10. Log deadline

All entries must be postmarked no later than 31 December 1992 and sent to: The Finnish Amateur Radio League SRAL attn: Jukka Kovanen OH3GZ PO Box 44 SF-00441 Helsinki Finland.

## International Amateur Radio Direction Finding Contest

The first international ARDF contest for IARU Region III will be held in Beijing, China, during September 1993.

Further details will be available shortly; however, expressions of interest are called for from amateurs interested in joining an Australian team.

Copies of the international rules are also available. Please contact  
Wally Watkins VK4DO  
PO Box 262  
Airlie Beach Q 4802  
Phone (079) 47 1036 — home  
Fax (079) 45 1375

## 1992 Australian Sprint Results

David Box VK5OV  
Adelaide Hills Amateur Radio Society  
Lists of the logs submitted for the 1992 sprints, together with the points claimed (or, in some cases, allowed) are shown below. Certificate winners are indicated by asterisks.

## CW Sprint

VK3OZ	*	4
VK4OD	*	9
VK4VHN		7
VK4TT		7
VK4BTS		4
VK5AFO	*	12
VK5NOT	*	11
VK5AU		7
VK5UE		5
VK5BE		3
VK6AFW	*	4
VK8AV	**	13

## Phone Sprint

VK1PJ	*	61
VK3DDU	**	68
VK3YH		60
VK3DVT		22
VK3OZ		21
VK4YZ	*	53
VK4OD		40
VK4NAD		20
VK4KJD		20
VK6APK/P6	*	32
VK8AV	*	51
P29RB	*	14
L40018	*	22
VK5PO	*	65
VK5AFO		57
VK5DL		56
VK5KYM		55
VK5AYD		52
VK5NYD		52
VK5KCX		52
VK5MAP		50
VK5ON		48
VK5NOT		42
VK5UE		41
VK5ATN		40
VK5KGS		31
VK5RV		31
VK5TY/P3		27
VK5OV		25
VK5CJP		24
VK5LMB		22
VK5BE		15
VK5DUG/P4		4

AT

**Support the  
WIA in order to  
protect  
amateur radio  
frequencies**

# Divisional Notes

## VK2 Notes

Tim Mills VK2ZTM

### VK2WI

A couple of weeks have now passed since the change to the 10am (local time) start for the morning session. This is a permanent move, and is NOT related to daylight saving as thought by some from the comments being received.

A reminder that news items submitted for the broadcast by whatever means must arrive at the Parramatta office, or on Packet, by 6pm on the Friday. There is need for all submissions to indicate the author/submitter, and if submitted on behalf of a group or club, the position held. Anonymous items are not considered. The inclusion of a contact number is beneficial to the Broadcast Officer, Richard VK2SKY.

As part of streamlining the broadcast presentation, some items are being slightly edited to remove statements etc. This also allows your item to be typed into general text, which in turn finds its way to the Packet network, and other electronic mail systems. Don't forget, tell others about your group's events.

## Council News

One of the flow-ons from the August general forum is the need for particular interest gatherings. An ATV forum is in the planning stages, but no date had been set when these notes were compiled. The date for Packet has been set as Sunday 22nd November, a 10am start at Amateur Radio House.

The Division's technical sub committee, NTAC, which includes the function of repeater and beacon assessments has been reformed into a basic core of five. In turn they will call upon other special interest groups like Packet and ATV as required. It is important that these groups develop into a working sub-committee, and formulate guidelines to benefit the users of that mode.

Those using the mode are the best qualified to determine these guidelines. Matters handled by NTAC which requires passing on to the DoFC, like a repeater application, or need to be incorporated into policy, are passed on to Divisional Council for ratification.

A reminder that new applications or alterations to an existing Repeater service has to be co-ordinated first by the WIA before it goes to the DoFC. This requirement is detailed in RIB70 — Information for Prospective Amateur Operators — clause 20(a)

## Types and Happenings

A couple of errors crept into last month's notes. The address for sending outwards cards to the VK2 QSL Bureau should have read PO Box 73, Teralba NSW 2284. The box 1 indicated is that of the Westlakes ARC who conducted the card handling on behalf of the Division. It should also be noted that any other matter pertaining to the Bureau should be directed in writing to the Divisional office at PO Box 1066, Parramatta NSW 2124.

The last exam conducted by the Division for this year will be on Sunday 8th November 1992. The first exam for 1993 will be Sunday 28th February 1993, with applications closing on 11th February 1993. Exams are then each three months, viz, May, August and November. To find out about exams conducted in your area, consult the listed personnel in the Amateur press, or enquire from the office.

The last Trash and Treasure for the year will be Sunday afternoon 29th November 1992. The first for 1993 is most likely to be in January, so watch these pages or the broadcasts.

## VK3 Notes

Barry Wilton VK3XV.

### Zero Subscription Increase.

Members at the 1992 Annual General Meeting recognised that a substantial subscription increase was warranted if the Division is to preserve its current financial strength, and be in a position to provide and further improve services in the future.

The meeting authorised an increase of \$6.00 in the Division component for all grades of membership with the exception of Concessional members.

Following much deliberation, and having regard to the current economic circumstances, Council has decided to postpone the increase until 1994. THERE WILL BE NO INCREASE IN THE 1993 SUBSCRIPTION.

### "Who bears the cost?"

For a long time members have subsidised services provided to non-members. WIA Victoria provides the best repeater network in Australia along with an efficient QSL Bureau, and assistance with antenna mast and interference problems. The majority of non-members are decidedly ungrateful, and many are vocal "knockers" of WIA Victoria.

The time for change is here, and no longer can we afford to service and

represent "all Amateurs" at the expense of our own loyal members. The year 1993 will see a significant reduction in services provided to non-members.

It is time the old adage "The WIA represents the interests of all Amateurs" was scrapped, and we looked toward improved "representation of the interests of our MEMBERS."

Who bears the cost of international representation at WARC and the IARU? Who pays for national representation with DOTC? Who pays to maintain the repeater network and the licences? WIA MEMBERS PAY!

It is appropriate that costs of these services be met by all those Amateurs who benefit from them. The best way to achieve this, is for you the member who does contribute, to PUT CONSIDERABLE PRESSURE ON NON-MEMBER AMATEUR FRIENDS TO JOIN THE WIA NOW AND BE A CONTRIBUTOR AND NOT JUST A USER.

### Recruiting.

Following the boost our hobby received from the influx of CB operators in recent years, it would appear our recruiting efforts may well have been misdirected.

In accord with Federal policy, the WIA has attempted to woo the computer enthusiasts, and a significant number have joined the ranks of Amateur Radio, but not necessarily the WIA.

The WIA has actively promoted lower levels of technical competence for basic entry to the hobby, and sought extra privileges for Novice licensees. Not a great deal has been achieved for Limited and Full Call holders.

Statistics show that the great majority of WIA Victoria members are, in fact, "Full or Limited" operators, and many recently recruited Amateurs have only joined our ranks so as to provide themselves with a medium in which to pursue their primary interests. Not many in the latter group contribute to the service they so freely use!

The WIA Victoria Council believes that a change in direction is warranted, and greater emphasis placed on the retention of loyal members and greater consideration given to their needs.

### Antenna Mast

The new edition of the popular WIA Victoria "Antenna Masts Guide" which was revised and reprinted in September has been withdrawn following the receipt of legal advice. Wide diversity in the regulations of local authorities make it impracticable to produce a "Guide" which is sufficiently broad in application to cover all contingencies. WIA Victoria has several people who have had wide experience in this field, and who are happy to provide advice on an individual basis for any members experienc-

ing difficulties, or who simply want to know how to approach their local authority.

Assistance from WIA Victoria does not extend to professional legal advice which is sometimes required in the case of a major dispute. However in some instances we may be able to provide a suitably qualified negotiator to represent an applicant with a local authority, or at an Administrative Appeals Tribunal. In this case the applicant would be required to meet the costs involved.

If you have a mast problem, it is far better to discuss it in the early stages, but please telephone the office first, so we can arrange for an experienced person to attend your queries. WIA Victoria does not have the resources available to provide assistance to non-members.

### **S/S WAVE**

*Roland Bruce VK5OU*

People who know me, or for that matter, have been reading this column of late, are aware that my work involves being out of Adelaide for ten or more weeks a year. That is one of the reasons we need a secretary to take over the reins I temporarily hold. (In fact, next year will be worse. Already seventeen weeks out of the state have been blanked out in my diary.)

Unfortunately, I don't get too much time to meet other amateurs, although the sight of antennae farms etc. are tempting diversions. However, one does hear quite a lot of what is going on in other places by keeping an ear to the repeaters and so on. Also, the public media are sources of information too. My latest trip involved being in Hawaii. I had one spare day to myself before flying out at mid-night, and intended visiting an electronics shop or two and getting some addresses of KH6's to call upon. So what happens? Hurricane INIKI hits us. No shops were open and the police cleared the streets in anticipation of 285 km per hour winds. Sensible stuff!

As you probably know, the hurricane veered from its projected course over Oahu and hit Kauai instead. The event was carried live on the local television channel, with "experts" making predictions, and flash-backs to the previous hurricane, together with on-the-spot interviews such as we get here on election night. About mid-day the power was lost on Kauai, and the anchor ladies spent the next four or five hours telling the viewers that the sole contact with the island was via Amateur radio, and asking that any HAMS (sic) receiving messages to let the TV station have whatever information they had available. I did meet in the hotel lobby a man wearing an ARRL badge, and we got to talking, of course. He was of the opinion that although there was some sort of disaster communications system within ARRL most amateurs did not be-

long to it, and he doubted that it was very effective. Are we the same here? I don't belong to WICEN, for one thing my peripatetic lifestyle would make me more of a hindrance than an asset, but there must be many who could be immensely useful, who keep meaning to join, but haven't got "a round tuit!" Are you one of them? In SA Ian Watson is your contact, either via Box 1234 or QTHR.

Talking of the efforts of mother nature reminds me, yet again, that the rains of recent weeks have held up my plans to build a tower base. Roll on summer.

Finally this month, we had quite a protracted Council meeting in September. It finished at 2:10 am (officially...., we were still there at 3:05 discussing things informally!) One discussion in particular was lengthy, following the earlier decision of Chuck, VK5CQ, to resign, on a matter of principle, his position as examination co-ordinator. Happily, he is continuing his very effective role on Council as membership secretary. Thanks Chuck. What it means though, is that once again I am making the plea, that if President Bob approaches you as a potential volunteer, please give it some thought. We need help. Come to think of it, why not volunteer before you are asked? DIARY DATE: Don't forget the Christmas Social to be held at the Woodville Community Hall, December 8th, 7:00 pm. This year a magician will be the speaker. He will talk about his hobby/job and demonstrate his art. Why not bring the family, not just the XYL? You can always leave early if they get tired. Drinks provided; bring a plate please.

### **VK5 Notes**

*Harry Atkinson VK6WZ*

#### **Special Event Station V16VIP**

The weekend of 21/22 November 1992 will see the operation of special event station V16VIP operating from Wireless Hill in the City of Melville WA, to mark the 80th anniversary of the coastal radio service through station VIP.

VIP, the first transmitter of its kind in Western Australia, and only second in all of Australia, began work in 1912. It was originally built by the German Telefunken Company, and taken over by the forerunner of Amalgated Wireless at the outbreak of WWI. It remained with that firm until

the establishment of the Overseas Telecommunications Commission in 1947.

V16VIP will operate on or near the following frequencies:-  
SSB 3.585, 14.195, 21.195 MHz  
FM 146.500 MHz  
CW 3.540, 14.050, 21.130 MHz

Organisers hope it will be possible to have the station operating on at least one of the above frequencies for the full 24 hours.

For the first 56 years of its history, VIP operated from the Wireless Hill Park site, then known as Applecross. During that time operations expanded from solely wireless telegraphy work to housing and supervising transmitters for police, AM commercial broadcasting, Navy, small ships and Australia's third overseas shortwave broadcaster 6ME, sister to 3ME Melbourne and 2ME Sydney, pioneers owned by AWA, and forerunners of today's Radio Australia service.

### **QRM from VK7**

*E A Beard VK7EB*

*VK7 Divisional Secretary*

On 24th November 1642, that is 350 years ago, the famous Dutch explorer Abel Jansen Tasman sighted two large mountain peaks which he named Heemskirk and Zeehan after two of his ships. The island from which the mountains rose Tasman called Van Diemens Land, later to be called Tasmania.

In this month of November 1992, the Dutch community and the Tasmanian Division of the Wireless Institute of Australia are celebrating the 350th anniversary of the discovery of our picturesque island.

#### **Special Event Station V17AJT**

A special event station under the Callsign of V17AJT will be operating from several areas of Tasmania during the month of November. There have been some very professional QSL cards designed by artistic members of the Division, also a very handsome certificate.

To qualify for the certificate, Australian stations must contact one (1) of the V17AJT stations, and nine (9) VK7 stations. Overseas stations must contact one (1) V17AJT station and two (2) VK7 stations.

The cost of the certificate shall be AUD\$5.00 or the equivalent in IRCs.

**When you buy something  
from one of our advertisers,  
tell them you read about it  
in the WIA Amateur Radio  
Magazine.**

# HF Predictions

Evan Jarman VK3ANI

The sunspot number used to generate this month's predictions is 70. Last month the numbers published showed a decline in activity over the past months, this time there is an increase in activity. Hopefully a portent of things to come.

## The Tables Explained

The tables provide estimates of signal strength for each hour of the UTC day for the four bands from 14 to 24 MHz. The UTC hour is the first column; the second column lists the predicted MUF (maximum useable frequency); the third column the signal strength in dB relative to 1  $\mu$ V (dB $\mu$ ) at the MUF; the fourth column lists the "frequency of optimum travel" (FOT), or the optimum working frequency as it is more generally known.

The signal strengths are all shown in dB relative to a reference of 1  $\mu$ V in 50 Ohms at the receiver antenna input. The table below relates these figures to the amateur S-point "standard" where S9 is 50  $\mu$ V at the receiver's input and the S-meter scale is 6 dB per S-point.

$\mu$ V in 50 Ohms	S-points	dB( $\mu$ V)
50.00	S9	34
25.00	S8	28
12.50	S7	22
6.25	S6	16
3.12	S5	10
1.56	S4	4
0.78	S3	2
0.39	S2	-8
0.20	S1	-14

The tables are generated by the Graph\_DX program, assuming 100 W

transmitter power output, modest beam antennas (eg three element Yagi or cubical quad) and a short-term forecast of the sunspot number. Actual solar and geomagnetic activity will affect results observed.

The three regions cover stations within the following areas:

**VK EAST** The major part of NSW and Queensland.

**VK SOUTH** Southern-NSW, VK3, VK5 and VK7.

**VK WEST** The south-west of Western Australia.

Likewise, the overseas terminals cover substantial regions (eg "Europe" covers most of Western Europe and the UK).

The relevant sunspot numbers used to generate the predictions are:

September	72
October	68
November	70

Changes are being contemplated in the format and information presented. If a particular format or path is preferred please advise us, in writing, at the WIA Federal Office, PO Box 300, Caulfield South Vic 3162.

### VK East-Mediterranean

UTC	MUF	dB $\mu$	FOT	14	18	21	24
0000	15.0	-10	14.0	100	100	100	100
0100	15.0	-10	14.0	100	100	100	100
0200	15.0	-10	14.0	100	100	100	100
0300	15.0	-10	14.0	100	100	100	100
0400	15.0	-10	14.0	100	100	100	100
0500	15.0	-10	14.0	100	100	100	100
0600	15.0	-10	14.0	100	100	100	100
0700	15.0	-10	14.0	100	100	100	100
0800	15.0	-10	14.0	100	100	100	100
0900	15.0	-10	14.0	100	100	100	100
1000	15.0	-10	14.0	100	100	100	100
1100	15.0	-10	14.0	100	100	100	100
1200	15.0	-10	14.0	100	100	100	100
1300	15.0	-10	14.0	100	100	100	100
1400	15.0	-10	14.0	100	100	100	100
1500	15.0	-10	14.0	100	100	100	100
1600	15.0	-10	14.0	100	100	100	100
1700	15.0	-10	14.0	100	100	100	100
1800	15.0	-10	14.0	100	100	100	100
1900	15.0	-10	14.0	100	100	100	100
2000	15.0	-10	14.0	100	100	100	100
2100	15.0	-10	14.0	100	100	100	100
2200	15.0	-10	14.0	100	100	100	100
2300	15.0	-10	14.0	100	100	100	100
2400	15.0	-10	14.0	100	100	100	100

### VK South-Mediterranean

UTC	MUF	dB $\mu$	FOT	14	18	21	24
0000	15.0	-10	14.0	100	100	100	100
0100	15.0	-10	14.0	100	100	100	100
0200	15.0	-10	14.0	100	100	100	100
0300	15.0	-10	14.0	100	100	100	100
0400	15.0	-10	14.0	100	100	100	100
0500	15.0	-10	14.0	100	100	100	100
0600	15.0	-10	14.0	100	100	100	100
0700	15.0	-10	14.0	100	100	100	100
0800	15.0	-10	14.0	100	100	100	100
0900	15.0	-10	14.0	100	100	100	100
1000	15.0	-10	14.0	100	100	100	100
1100	15.0	-10	14.0	100	100	100	100
1200	15.0	-10	14.0	100	100	100	100
1300	15.0	-10	14.0	100	100	100	100
1400	15.0	-10	14.0	100	100	100	100
1500	15.0	-10	14.0	100	100	100	100
1600	15.0	-10	14.0	100	100	100	100
1700	15.0	-10	14.0	100	100	100	100
1800	15.0	-10	14.0	100	100	100	100
1900	15.0	-10	14.0	100	100	100	100
2000	15.0	-10	14.0	100	100	100	100
2100	15.0	-10	14.0	100	100	100	100
2200	15.0	-10	14.0	100	100	100	100
2300	15.0	-10	14.0	100	100	100	100
2400	15.0	-10	14.0	100	100	100	100

### VK West-Mediterranean

UTC	MUF	dB $\mu$	FOT	14	18	21	24
0000	15.0	-10	14.0	100	100	100	100
0100	15.0	-10	14.0	100	100	100	100
0200	15.0	-10	14.0	100	100	100	100
0300	15.0	-10	14.0	100	100	100	100
0400	15.0	-10	14.0	100	100	100	100
0500	15.0	-10	14.0	100	100	100	100
0600	15.0	-10	14.0	100	100	100	100
0700	15.0	-10	14.0	100	100	100	100
0800	15.0	-10	14.0	100	100	100	100
0900	15.0	-10	14.0	100	100	100	100
1000	15.0	-10	14.0	100	100	100	100
1100	15.0	-10	14.0	100	100	100	100
1200	15.0	-10	14.0	100	100	100	100
1300	15.0	-10	14.0	100	100	100	100
1400	15.0	-10	14.0	100	100	100	100
1500	15.0	-10	14.0	100	100	100	100
1600	15.0	-10	14.0	100	100	100	100
1700	15.0	-10	14.0	100	100	100	100
1800	15.0	-10	14.0	100	100	100	100
1900	15.0	-10	14.0	100	100	100	100
2000	15.0	-10	14.0	100	100	100	100
2100	15.0	-10	14.0	100	100	100	100
2200	15.0	-10	14.0	100	100	100	100
2300	15.0	-10	14.0	100	100	100	100
2400	15.0	-10	14.0	100	100	100	100

### VK East-Europe L/P

UTC	MUF	dB $\mu$	FOT	14	18	21	24
0000	15.0	-10	14.0	100	100	100	100
0100	15.0	-10	14.0	100	100	100	100
0200	15.0	-10	14.0	100	100	100	100
0300	15.0	-10	14.0	100	100	100	100
0400	15.0	-10	14.0	100	100	100	100
0500	15.0	-10	14.0	100	100	100	100
0600	15.0	-10	14.0	100	100	100	100
0700	15.0	-10	14.0	100	100	100	100
0800	15.0	-10	14.0	100	100	100	100
0900	15.0	-10	14.0	100	100	100	100
1000	15.0	-10	14.0	100	100	100	100
1100	15.0	-10	14.0	100	100	100	100
1200	15.0	-10	14.0	100	100	100	100
1300	15.0	-10	14.0	100	100	100	100
1400	15.0	-10	14.0	100	100	100	100
1500	15.0	-10	14.0	100	100	100	100
1600	15.0	-10	14.0	100	100	100	100
1700	15.0	-10	14.0	100	100	100	100
1800	15.0	-10	14.0	100	100	100	100
1900	15.0	-10	14.0	100	100	100	100
2000	15.0	-10	14.0	100	100	100	100
2100	15.0	-10	14.0	100	100	100	100
2200	15.0	-10	14.0	100	100	100	100
2300	15.0	-10	14.0	100	100	100	100
2400	15.0	-10	14.0	100	100	100	100

### VK South-Europe L/P

UTC	MUF	dB $\mu$	FOT	14	18	21	24
0000	15.0	-10	14.0	100	100	100	100
0100	15.0	-10	14.0	100	100	100	100
0200	15.0	-10	14.0	100	100	100	100
0300	15.0	-10	14.0	100	100	100	100
0400	15.0	-10	14.0	100	100	100	100
0500	15.0	-10	14.0	100	100	100	100
0600	15.0	-10	14.0	100	100	100	100
0700	15.0	-10	14.0	100	100	100	100
0800	15.0	-10	14.0	100	100	100	100
0900	15.0	-10	14.0	100	100	100	100
1000	15.0	-10	14.0	100	100	100	100
1100	15.0	-10	14.0	100	100	100	100
1200	15.0	-10	14.0	100	100	100	100
1300	15.0	-10	14.0	100	100	100	100
1400	15.0	-10	14.0	100	100	100	100
1500	15.0	-10	14.0	100	100	100	100
1600	15.0	-10	14.0	100	100	100	100
1700	15.0	-10	14.0	100	100	100	100
1800	15.0	-10	14.0	100	100	100	100
1900	15.0	-10	14.0	100	100	100	100
2000	15.0	-10	14.0	100	100	100	100
2100	15.0	-10	14.0	100	100	100	100
2200	15.0	-10	14.0	100	100	100	100
2300	15.0	-10	14.0	100	100	100	100
2400	15.0	-10	14.0	100	100	100	100

### VK West-Europe L/P

UTC	MUF	dB $\mu$	FOT	14	18	21	24
0000	15.0	-10	14.0	100	100	100	100
0100	15.0	-10	14.0	100	100	100	100
0200	15.0	-10	14.0	100	100	100	100
0300	15.0	-10	14.0	100	100	100	100
0400	15.0	-10	14.0	100	100	100	100
0500	15.0	-10	14.0	100	100	100	100
0600	15.0	-10	14.0	100	100	100	100
0700	15.0	-10	14.0	100	100	100	100
0800	15.0	-10	14.0	100	100	100	100
0900	15.0	-10	14.0	100	100	100	100
1000	15.0	-10	14.0	100	100	100	100
1100	15.0	-10	14.0	100	100	100	100
1200	15.0	-10	14.0	100	100	100	100
1300	15.0	-10	14.0	100	100	100	100
1400	15.0	-10	14.0	100	100	100	100
1500	15.0	-10	14.0	100	100	100	100
1600	15.0	-10	14.0	100	100	100	100
1700	15.0	-10	14.0	100	100	100	100
1800	15.0	-10	14.0	100	100	100	100
1900	15.0	-10	14.0	100	100	100	100
2000	15.0	-10	14.0	100	100	100	100
2100	15.0	-10	14.0	100	100	100	100
2200	15.0	-10	14.0	100	100	100	100
2300	15.0	-10	14.0	100	100	100	100
2400	15.0	-10	14.0	100	100	100	100

VK East-Africa	VK South-Africa	VK West-Africa
UTC MUF dBu FOT 14 18 21 24	UTC MUF dBu FOT 14 18 21 24	UTC MUF dBu FOT 14 18 21 24
VK East-Asia	VK South-Asia	VK West-Asia
UTC MUF dBu FOT 14 18 21 24	UTC MUF dBu FOT 14 18 21 24	UTC MUF dBu FOT 14 18 21 24
VK East-South Pacific	VK South-South Pacific	VK West-South Pacific
UTC MUF dBu FOT 14 18 21 24	UTC MUF dBu FOT 14 18 21 24	UTC MUF dBu FOT 14 18 21 24
VK East-USA/Caribbean	VK South-USA/Caribbean	VK West-USA/Caribbean
UTC MUF dBu FOT 14 18 21 24	UTC MUF dBu FOT 14 18 21 24	UTC MUF dBu FOT 14 18 21 24



## How's DX

Stephen Pall VK2PS PO Box 93 Dural, NSW 2158

"In this life, never take anything for granted." My wise old grandmother told me this many decades ago. To prove her point, the Production Editor of AR wrote me a letter not so long ago and asked me to reduce the length of this column to one-and-a-half pages, including photographs. The reason? To allow the production team to make the best possible use of the available space.

During the past three years — since I started writing this column — the average length of it was two-and-a-half pages. On a number of occasions it was less than that, and, out of the 36 issues, on six occasions the length of the column was three pages.

To comply with this request, some sections have to disappear. Which ones? The decision is not mine, but is yours alone, the readers of this column.

What shall we leave out? The introduction bit to the column? No more "Interesting QSOs and QSL Information? No more DX-related photographs? No more "QSLs Received" information? What about cutting out the section "From Here and There and Everywhere"? Maybe you do not want to be informed about future DX activity? Maybe you do not want the short informative stories about various DX activities?

Your urgent and written opinion is sought now, otherwise the alteration will follow without your — the readers' — input.

Send your letters directly to me — now, not next week! There is no time left. After collating the information received, copies of your letters will be forwarded to the Production Editor for his final decision.

If you feel you have to write directly to the editor of AR, then please send a copy of your letter to me also, so I will be better informed. My address is at the beginning of this column.

If you are one of the silent majority who reads this column, enjoys it, and finds the information useful, but never yet expressed an opinion about it, this is now the time for action.

Remember, this is the last call before the meat cleaver hits the chopping block.

### QSLing the VK9/VK0 QSL Bureau

From time to time, Neil VK6NE, the WIA VK9/VK0 QSL bureau manager, sends me interesting snippets about his bureau's problems. It should be noted by all DXers that the facilities provided are self-funding. Unless the DXer leaves adequate funds with the bureau for both incoming or outgoing cards, the pile of uncollected or unforwarded cards is mounting at Neil's place. Here are some examples: VK9LA cards of Tony — QSL manager DJ5CQ — are stuck in Neil's boxes due to lack of forwarding funds.

The following operators of DXpeditions in the year 1987: VK9AB (ZLIAMO), VK9LB (VK2BCH), VK9NP (VK2BPC) have not made arrangements for forwarding of VK9 bureau cards. On the other hand, the recent expeditioners from Cocos-Keeling and Christmas Islands, VK9CL, VK9CK, VK9XN and VK9XM, have left adequate funds and bureau cards are being

sent to the overseas addresses. VK9CB is looking after his own cards via the VK6 Bureau. The lesson from all this for all those who need a VK9 or VK0 QSL card, irrespective of the locality of the operator: QSL direct only.

### Heard Island VK0

The proposed DXpedition to Heard Island has been cancelled because the proposed budget figure of \$63,000 was not covered by donations and pledges which, at the time of cancellation by HIXA, was less than \$20,000. It appears that Heard Island is not wanted by the majority of DXers, whilst the UK donations and pledges organised by RSGB DX News Sheet were admirable. The lack of support from Europe and other parts of the world was noticeable. Future DXing from Heard Island does not look very promising. The proposed listing on the World Heritage Register of the island will make future physical access and permission to operate almost impossible.

### Sable Island — CY0

This small (32km long and 1.6km wide) sand island lies about 140km in a southeasterly direction from the Canadian province of Nova Scotia. Besides a small herd of wild ponies, only the essential meteorological-cum-lighthouse staff is living on the island.

A multi-operator group with the callsign CYONSM was active from the island for about a week early in October. QSL goes to Wayne King VEICBK, PO Box 32, Site 35, RR#1, Windsor Junction, NS, B0N2V0 Canada.

### DXCC Accreditation of DX Stations

The following activities have been accepted for the DXCC award: 5R8JD (July 1988), S931J (10 March 1992) S21ZA (Aug 1992), XO0NU and XU1NU (6 July '92 to 6 Jan '93, 10/15/20m only), F6/BLQ/D2 (from 23 June '92 until 23 Jul '92, 10/15/20m only), C9RJJ from 20 July 1992, 717CE from 4 June 1992, ZA/K6ZYZF and ZA/G3MHV operations from 13 June to 13 July 1992.

### Future DX Activity

- Shane Wheller, son of Reg VK4PL, departs for Antarctica, Casey Base, late November, and hopes to be active with a VK0 callsign early in the new year. His Antarctic callsign and QSL information are not yet known.
- There is unconfirmed news that Macquarie Island will be heard on the air soon.



Jim VK9NS operating in Bangladesh as S21ZA.

- According to some news from an official of the Ghana Frequency Registration and Control Board amateur radio will be permitted as from 15 January 1993.
- Kiyoko NH6RT, who was active on the various Pacific islands one and a half years ago, is now in Nepal for a longer stay and hopes to get a licence soon.
- The amateur group Peter N0AFW, Charlie N7QQ, Jay WA2FJ, ON6TT Peter, N9NS Mike, John KA7CQ, Arie PA3DUU, Ron WA6FGV and Vincent G0LMX/FIMBO — the group which had a successful operation on Clipperton Island with the call FO0CI — plans to activate Baker/Holland Islands (KH1), Palmyra/Jarvis Islands (KH5), and Kingsman Reef (KH5K) in March 1993.
- Paul WC3P will be active from Christmas Island as T32BE between 24 November and 7 December.
- XU7VK on HA7VK, was on home leave in Hungary. Will go back to Cambodia at the end of October. QSL to HA0HW.
- XU1NU and XU0NU will operate until 6 January on 14, 21 and 28 MHz only. QSL to F6FNU.
- Bob N6BFN is moving back to Kuwait City and intends to be on the air with the callsign 9K2ZZ.

## Interesting QSOs and QSL Information

- Note: callsign, name, frequency, mode, UTC, month.
- TF3DX-14035-CW-0800-July. QSL to V T Kjartansson, Njor Vassundi 4, IS 104 Reykjavik, Iceland.
  - 9H3PB-14004-CW-0615-Sept. QSL to DF4EK.
  - C9RJ3-14029-CW-0445-Sept. QSL to W8GIO, Paul R Vets, RT1, Box 140-42, Bunker Hill, WV 25413, USA.
  - XU0NU-21040-CW-1000-Sept. QSL to F6FNU A Baldeck, Box 14, F-91291, Arpajon, Cedex, France.
  - JY5IN-Ibrahim-14252-SSB-0445-June. QSL to I Naser, Box 925677, Amman, Jordan.
  - CUOC-Antonio-14210-SSB-0410-July. QSL to CU3AN, Jose Gabriel Alves Silva, PO Box 157, P-9702, Angra Do Heroismo Codes, Azores.
  - 4K4NN-3504-CW-1216-Sept. QSL to KC4UG.
  - OE53SGU-Hannes-13167-SSB-0715-Oct. QSL to OE3SGU.
  - OD5/SPIMHV-14023-CW-0348-Sept. QSL to SPIMHV via the Bureau.
  - F7W1DJ-Joseph-14186-SSB-1103-Sept. QSL to PO Box 300 Wallis Island, South Pacific.

## From Here and There and Everywhere

- News from Bing VK2BCH after he spent one month in a Sydney hospital: "Dome my best until I was forced to evacuate myself (from Rotuma) on 1 August. I am slowly recovering, but still very weak. I am making every effort to work the computer and radio every day."
- F6FNU is the QSL manager for many DX stations with French-speaking operators or stations connected with former French possessions. According to his own QSLing rules, you have to QSL directly within six months of the activity, and the return postage is USD\$2 (no IRCs, no bureau cards).
- By the time you read this the Willis Island mini-DXpedition by Jim VK9NS, Kirsti VK9NL and Aitsu VK2BEX is over. They met in Cairns on 10 October, and left by charter seaplane for Willis Island on 12 October for a seven-day operation.
- The amateur population of Pitcairn Island has increased by one. VR6RC is Raelene, daughter of Tom VR6TC and Betty VR6YL.
- The operator under the Yemeni callsign 701ZZ is a pirate and V37ZZ is not his QSL manager.
- Karl VK6XW was active from Cocos-Keeling Islands for 14 days in mid-September as VK9CY.
- Jack T3OJH is back on the air again after severe illness which required four weeks hospital treatment in Sydney. We wish you a speedy and full recovery, Jack!
- Duane W6REC is advising he is not the QSL manager for JT1JA as he has no logs nor QSL cards.
- Chuck K8CH, manager of membership services of the ARRL (this also includes the DXCC desk) replied to Monk Apollo's SV2ASP/A complaints regarding the DJ6SI/SY operation (see AR Sept '92 issue). Regretting the disturbance caused to the Holy Community by amateur operators, Chuck says that the ARRL was unable to make a distinction between Balduz's operation and other operations in the past which were counted for the DXCC. — "We cannot undo the past, and it is not possible for us to erase credits from DXCC records," writes Chuck.
- W6RO, the famous Queen Mary amateur radio station in Long Beach, California, has been closed down by the Disney Corporation after 20 years activity.
- IRCs (International Reply Coupons) are not acceptable in Lesotho, according to 7P8SR.

- It is illegal in India for nationals to receive foreign currency. Send IRCs only.
- Novices in Cuba are now allowed on 1.8, 3.5 and 7MHz bands and use the CL prefix. there are 1151 (1991) licensed amateurs in Cuba.
- OE3SSGU was celebrating the 35th anniversary of the JOTA activity.

## QSLs Received

Note: W=week. M=month. Y=year.  
FM=from. MGR=manager/call.  
OP=operator/callsign.

## Direct QSLs received

7X2DG (7W FM OP); Y11BGD (7W FM MGR JY3ZH); 5Z4BJ (4W FM MGR F4RLU); 7V3DC (5W FM OP); 457NMR (16M FM OP); ZC4CZ (4M FM MGR G4SSH); FO0CI (8W FM MOR N7QQ); S21ZA (1W FM VK9NS).

## Bureau cards received

9M2DW (WY FM OP), OD5MM (18M FM MGR HB9CYH), HB0/HB9NL (20M FM MOR HB9NL), 5T5FA (2Y FM MGR IK5BHN), JA7FT3/JD1 (EY FM OP JA7BLJ), T30DS (17M FM MGR DJ9ZB), 5N0ETP (1Y FM MGR N6QLQ), OY2VO (11M FM OP). BV2DM (9M FM OP).

## Thank You

We are living in difficult times, therefore, more than ever many thanks to the supporters of this column, especially to: VK2BEX, VK2BCH, VK2DIS, VK2KFU, VK3DD, VK4DA, VK4OD, VK4OH, VK4XW, VK6NE, VK9NS, N0AFW, and the following publications: *QRZ DX*, *The DX Bulletin* and *The DX News Sheet*.

Good DX and 73

## Production Editor's Note:

Space restrictions are the bane of every magazine editor, these are unfortunate, but necessary. As AR is a "Member" magazine, we do not have the luxury of unlimited pages. We try to publish the broadest range of material available, within the economies placed on us. Our policy is to allow more members to have the opportunity to express their thoughts, either in articles written, or letters etc. Should a submitted item exceed space allocations, as determined by member surveys and feedback, then it is possible it may be part serialised to another issue. To date we have not had to resort to this, but unfortunately several other contributors' articles have had to be deferred for another month.

I also have a wise old grandmother, she gets a little confused now, but she mentions things about the problems of putting quarts into pint pots!

Comment from members is most welcome ... VK3UV

# IARUMS — Intruder Watch

Gordon Loveday VK4KAL Federal Intruder Watch Co-ordinator  
Freepost No 4 Rubysvale, Qld 4702 or VK4KAL@VK4UN-1

## CB Made for 10 Metres

"BVIRL reports seeing CB radios from a manufacturer ready for transmission on the 10m band, 28.005, 28.015, 28.025 and 28.035 MHz.

## Reports

The Spanish administration has started taking action against intruders. Some have been fined up to 100,000 pesetas!

Reports are requested on the Ethiopian Diplomatic Net, operating daily on 21.061 MHz between 0600-1200 UTC. Please check the frequency and advise.

Intruders from Indonesia continue to cause problems for legitimate amateur operators in Singapore and Australia — mainly on the 20m band. A determined effort is being made to counter this area of disturbance.

From Holland we have a report that the intruder on 14.058 MHz is F7B four-

frequency two-channel duplex with a baud rate of 100. The pulses are 10ms long. The frequency of tones are spaced 400Hz and are 1260, 1660, 2060 and 2460Hz. The on/off pulse has a duration of 175ms and appears to be on top of the tones. It is, as we know from other sources, Chinese military.

Reports from Region 1 co-ordinator Ron Roden G4GKO/4X8RR:RSGB, requests to Govt Radio Administration to take action on: (1) Radio Russia and Radio Ukraine on 7120 kHz producing a very strong harmonic on 14240 kHz. (2) Radio Bucharest resident on 18080 and 18150 kHz. (3) CIS, a station on 14171 kHz is F1B transmitting on a 40dB, 200Hz shift.

From R2 come complaints about Arabic operations on 14 MHz, centring around 14.090 MHz. Any input from our area? Solar conditions poor?

I got copies of all regions summaries for July, which I find very interesting to say the

least. Many intrusions are on a worldwide scale, with only signal strength varying, as of course, the time.

I must say the Spanish have certainly had a crackdown. Maybe we should follow suit, in case you have not seen the extract of translation by DJ9KR DARC, as under.

In a letter from the Spanish Telecommunications authorities, the DARC Monitoring System was informed that in those cases where the information given by amateur is sufficient to identify and localise unauthorised users of the amateur bands, they would take the appropriate action. In 1992 they dealt with 1358 CB operators, 496 in the Terrestrial Mobile Service, 46 in the amateur service, 233 radio equipment manufacturers or dealers and 138 other persons. The fine for infractions is SPp100,000 (100,000 pesetas). Spanish authorities are pleased to invite the DARC Monitoring System to send information to them and promise adequate action against those responsible.

This possibly would cover our "pirates", but some action should be taken with those dealers who sell transmitters to all and sundry, no questions asked or licences sighted. If Spain can do it, where does that leave us???

73, Gordon VK4KAL

# Knutshell Knowledge

Graham Thornton VK3IY PO Box 298 World Trade Centre Melbourne 3005

What follows is a brief overview of what other magazines have to say. If copies of complete articles are required, your Divisional library may be able to help; or perhaps some member of your club has the information.

## Antennas

### ATUs

A Single Coil Z-Match Antenna Coupler. T J Seed ZL3QQ, *Break-In* vol 65 No 2 March 1992 pp 10-12. It cets and graphs. A design with analysis is given for a single coil coupler suitable for the amateur bands. A single centre-tapped coil replaces the two coils previously used.

Quiet Tune Revisited. A M Wooler ZL1AUW, *Break-In* vol 65 No 1 Jan/Feb 1992 p 5. It cets. An improved noise bridge for silent ATU tuning is described. The device offers extended operation into the VHF band. The noise source is protected against inadvertent transmission, and this condition is indicated by illumination of incandescent lamps. An LED flasher shows the state of the internal battery.

## Mechanical Details

The Fold-Over Mobile Mount. Bob Dickinson KD6AAI, *QST* vol LXXVI No 3 March 1992 pp 43-44. It diag and photos. A self-closing door hinge, adapted as an antenna mount, allows the complete antenna system to fall back under impact. Under normal driving conditions, antenna operation is unaffected.

## Amateur Television

An ATV Downconverter with a Difference. Don C Miller W9NTP, *73* #378 March 1992 pp 22, 24, 26, 28. It cets, cmps, graphs and pcbs. The upper sideband of 439.25 MHz ATV signals is subject to interference from FM repeaters. A device is described which detects the ATV lower sideband instead. When reproduced on a standard TV receiver, the interfering FM signals are greatly attenuated.

## Electronic Devices

### Automatic

"El Cheapo" Car Voltmeter. Norm Bush and Peter Phillips, *EA* vol 54 No 3 March 1992 pp 90-91, 95. It cets, cmp, diag, pcb and

photos. Three LEDs, of different colours, are used in combination to indicate battery voltage. The unit fits neatly into a 35 mm film container.

## Miscellaneous

Sound Switch. Peter Murtagh, *EA* vol 54 No 3 March 1992 pp 75-77. It cets, cmps, diag, pcb and photos. A microphone operates a relay, the closure of which may be sustained for an adjustable interval.

Sprinkler Timer. Leo Aravidis, *EA* vol 54 No 3 March 1992 p 56. It cets. Four sprinkler systems are energised in sequence. The timing for each may be set independently. When the period of the fourth sprinkler has elapsed, the system awaits a reset signal.

## Filters

The JFS NF-60 DSP Notch Filter. (Product Review) Bill Clarke WA4BLC, *73* #378 March 1992 pp 36, 38. An appraisal is given of this commercial equipment, which can eliminate multiple heterodyne tones automatically. A deep narrow notch is generated whenever a constant pitch is detected.

## Narrow Band Modes

Connecting Two Modems to One Transceiver. Walter E Kaehn KB6BT, *QEX* #121 March 1992 pp 7-8. il cct. An interface circuit is presented which allows two modems to be switched to a single transceiver. The switching is controlled via a computer. AMTOR and PSK modems can be switched in this way.

Getting Started in Digital Communications (1). Steve Ford WB8IMY, *QST* vol LXXVI No 3 March 1992 pp 33-37. il ccts, diags and photos. An introduction is given to the various digital modes. The options available to the beginner to get involved are discussed.

## Propagation

Eleven Years of Sporadic E. Emil Pocock W3EP and Patrick J Dyer WA5IYX, *QST* vol LXXVI No 3 March 1992 pp 23-28. il graphs and photo. The daily measurements of sporadic E activity observed at San Antonio over an eleven year period are discussed and analysed. A previously unreported 5 day cycle is revealed.

## Power Supplies

### Batteries

Lemonized QSO. Bob Culter N7FKI and Wes Hayward W7ZOI, *QST* vol LXXVI No 3 March 1992 pp 18-19. il cct and photos. A zinc-plated nail and a copper tube inserted into a lemon, produces an open circuit voltage of 0.93 volts. This energy source may be used to power a single transistor transmitter, producing "QLP" emission.

### Battery Chargers

Longer Life for Nicads (2). James Moxham, *EA* vol 54 No 3 March 1992 pp 104-106, 119. il ccts. Various charging circuits are described. Periodic current reversal, to avoid dendrite formation, is discussed and a suitable circuit provided. Another PCR circuit gives alternate constant current charging and discharging. Battery voltage monitoring circuits are also described, one of which automatically disconnects the load in the event that one cell goes flat.

### Inverters

Powerhouse 1200: Twice The Power (2). Peter Harris, *EA* vol 54 No 3 March 1992 pp 68-74. il cmpts, diags and photos. The construction and commissioning details are given in this part.

### Series Regulated

The Lappack. Brian Kassel W5VBO, *73* #378 March 1992 pp 52, 54, 60. il cct, cmp, pcb and photos. A 9 V output regulator is described which supplies 2.5 A from a 12 V source. It is designed for extended portable use of a laptop computer, used for packet operation. An overvoltage crowbar protection is included.

## Receivers

The Drake R8 Shortwave Receiver. Jim Kearman KRIS, *QST* vol LXXVI No 3 March 1992 pp 72-75. il photo. This review includes laboratory measurements.

## Satellites

### Miscellaneous

Using RS-12. Pat Gowen G3IOR, *73* #378 March 1992 pp 32, 34, 35, 38. A comprehensive description is given of the features available on RS-12, and how to use them. Particular emphasis is given to HF transponder operation, for over the horizon DX.

## Weather

Simple APT Weather Satellites Interface. Robin Ramsey ZL3TCM, *Break-In* vol 65 No 2 March 1992 pp 4-8. il ccts, cmp, graphs, pcb and photos. A design is presented for a low-cost interface which gives display of weather pictures from Automatic Picture Transmission satellites. Various antenna systems are discussed, together with methods of display.

## Technology

Do You Know Where Your CW Signal Is? Randy Henderson W1SW, *QST* vol LXXVI No 3 March 1992 pp 40-42. il ccts and graphs. The importance of transmitting exactly on the calling station's frequency is discussed. Techniques are described to measure the offset between received and transmitted frequencies.

Phase-locked Loop FM Demodulators. Bryan Maher, *EA* vol 54 No 3 March 1992 pp 54-55, 98. il ccts. The theory of operation of PLL ICs as FM demodulators is discussed. Suitable ICs from various manufacturers are listed.

Rubbersat — The Balloons. Robin Ramsey ZL3TCM, *Break-In* vol 65 No 2 March 1992 pp 14-16. il graphs and photos. The techniques used and the results obtained from a series of balloon transponder experiments are discussed.

Rubbersat — The Electronics. Murray Hely ZL4TIB, *Break-In* vol 65 No 2 March 1992 pp 18-19. il ccts. The design of transponders used in the Rubbersat flights is described. 2 m uplink and 10 m downlink was chosen. A linear transponder is described, together with an FM receiver/SSB transmitter combination.

## Test Equipment

### Field Strength Meters

A Remote Field Strength Meter. Ken Cornell W2IMB, *73* #378 March 1992 pp 44, 46. il ccts and diag. A remote system uses 510 to 1705 kHz for field strength telemetry. The detected HF signal is applied to a varactor diode; the pitch of the signal received in the shack is an indication of relative field strength.

Field-Strength Indicators. Hugh Wells W6WTU, *QEX* #121 March 1992 pp 10-11. il ccts. This review article discusses a variety of circuits which may be used as field-strength indicators in the near field, and to plot polar patterns in the far field.

## Frequency Meters

A ZL DIY Rubidium Frequency Reference. David Fraser ZL3AI, *Break-In* vol 65 No 2 1992 p 9. The ZL TV1 and TV2 channels synchronise line frequency oscillators to a rubidium reference, accurate to one thousandth of a part per million. The line oscillator frequency is 1/64th of a megahertz, which is a sub-multiple of most counter timebases. Application of the counter timebase to the Y amplifier of a CRO, with the line oscillator signal operating the trigger, gives a stationary pattern if the frequencies have an exact multiple relationship.

Digimax D-1200 Frequency Counter. (Product Review) Thomas S Rowinsky KAIMDA, *73* #378 March 1992 pp 18, 20-21. A review, with measurements, is given for this equipment which may be used up to 1.2 GHz.

Simple Pulsed Crystal Signal Source. Leslie K Bartoloth KAIMJP, *73* #378 March 1992 pp 14, 30. il cct, cmp, pcb and photo. A Pierce crystal oscillator is keyed at 5 Hz. This recognisable signal provides spot calibration for transceivers. A continuous signal is also available.

## Function Generators

Low Cost Sine/Square Wave Oscillator. Rob Evans, *EA* vol 54 No 3 March 1992 pp 58-64. il ccts, cmp, diags, graphs, pcb and photos. A Wien bridge oscillator, with incandescent lamp stabilisation, gives a sine wave output from 20 Hz to 50 kHz, with less than 0.1% distortion. An output up to 2 V RMS is available in three switched ranges. A 555 timer provides a square wave up to 2 V amplitude over the same frequency range, with a rise and fall time of less than 50 ns.

## Miscellaneous

Capacitor Leakage Tester. Ian Johns, *EA* vol 54 No 3 March 1992 p 57. il cct. A DC voltage of 180 V is applied to a series circuit consisting of a neon lamp, a resistor and the capacitor under test. The flashing rate of the neon is directly proportional to the leakage current, and inversely proportional to the capacitance.

Transistor Leads Identifier. Len Ahearn, *EA* vol 54 No 3 March 1992 p 57. il cct. A switching arrangement with four LEDs, determines both the polarity of a bipolar transistor, and the identification of its leads.

Transmitter Noise Loading. John White VE7AAL, *QEX* #121 March 1992 pp 3-6. il cct and graphs. A technique is described for measurement of transmitter spectral characteristics by using audio white noise

as a substitute for a two tone test signal. It is claimed that this approach provides a more relevant result for speech transmission.

## Transceivers

### Product Reviews

The Japan Radio Company JST-135HP MF/HF Transceiver. David Newkirk WJIZ, QST Vol LXXVI No 3 March 1992 pp 67-72. It graphs and photo. A review is given of this transceiver, including laboratory measurements.

## Transmitters

### Home Brew

40/80 Meter Wave Ryder. Charles D Rakes KA5IZ, 73 #378 March 1992 pp 40, 41. It cct, cmp, diag and photo. A single tube crystal oscillator power amplifier gives up to 2 W output. It operates from 12 V DC.

The filament is supplied via a three terminal constant current regulator. A transformer/rectifier, fed by a transistor pulsed by a 555 timer, produces 150 V DC for the anode.

## Glossary of Abbreviations

il	The article contains illustrations, a list of which follows.
cct	A circuit diagram
cmp	A component layout drawing
EA	Electronics Australia
diag	A mechanical drawing
pcb	A master drawing from which printed circuits may be produced
QSTVE	QST Canada
RadCom	Radio Communication
73	73 Amateur Radio Today
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# Silent Keys

*Due to increasing space demands obituaries should be no longer than 200 words*

The WIA regrets the recent passing of :  
 D B (Don) Shaw VK2BDS  
 C M Allison VK3AZC  
 L G (Len) Herman VK3NF  
 W J (Bill) Hehir VK3RE  
 R J (Jack) Gayton VK4AGY  
 (Honorary Life Member)  
 K V (Ken) Wragg VK4AKQ  
 J G (Graham) Colley VK4BQZ  
 H H Davis VK5AFK

### Kenneth Vincent Wragg VK4AKQ

Ken passed away on 29th September 1992. He hailed from Adelaide and moved to Queensland following his second World War service as a signaller in the Armoured Corps. He was a foundation member of the Brisbane North Radio Club, and the Kedron-Wavell Services (RSL) Club. Other interests included his Masonic Lodge in which he also took an active part.

Ken will be missed by all who knew him, especially by his daughter Margaret, her husband Graham and their children.

Peter W J Parsons, VK4NJO

his first flight in a DH82. Within six months, Bill had his Commercial Pilots Licence. In September 1940, Bill and his wife Sheila took up residence in Hamilton to fly the "Airspeed Envoy" for Ansett Airways to Essendon and return.

It was during 1942 that Bill was required to instruct at the Melbourne Technical College (now RMIT) in Radio Location (RADAR) to Australian and American Army, Airforce and Navy personnel for the rest of WWII.

The high point of his life was the stage sound amplification for the American entertainers of the late 1950s. Such as Frank Sinatra, Nat King Cole, Louis Armstrong, Frankie Lane, Chuck Berry, Johnny Ray.

Bill retired from Radio and TV servicing in 1972, and spent his retirement experimenting with antennas, and improving his radio station and many improvement projects.

Our sympathies to his wife Sheila, sons Peter, Stephen, Timothy and families.

Iris Harwin VK1JN

### Dud Charman G6CJ

RAOTC member no 83, Dud Charman G6CJ known to countless CW DXers the world over is now a Silent Key. He passed away in his sleep on the morning of Friday 25th September.

Dud was a former president of the RSGB, and of the British Radio Amateurs Old Timers Association. He was responsible for reviving this club over the last ten years. Dud was also a member of the First Class CW Operators' Club.

For his wartime work as a back room boy, designing antennas etc for defence equipment, he was awarded the MBE. Many members will recall Dud's expertise on antennas, and the demonstration of his

"Antenna Circus" which he gave during his visit to Victoria in 1976.

Until illness overtook him seven months ago, he had regularly kept scheds with VK3XB and VK3KS on 7, 10, 14 and 18 MHz, for a period of 20 years.

His absence from the CW section of all HF bands will be sorrowfully accepted by the many amateurs who knew him.

Vale Dud ...

Ivor Stafford VK3XB  
and  
Mavis Stafford VK3KS

### Bob Stancliffe VK5VG

Bob Stancliffe VK5VG, G3VIT, VS9ARS died on 13th January 1992 after a short but painful illness. Bob lived with his family on a farm at Yalunda Flat (Heaven help anyone pronouncing it Yalumba Flat), near Tumby Bay on South Australia's Eyre Peninsula.

Bob was a much travelled amateur very largely due to his 22 years service in the Royal Marines. It was during these years that David (ex G3LQV now VK5ADE) first met Bob and had many long QSOs about their service in the corps. Bob was not the gruff man that one first met. He was very sentimental but tolerated fools badly. He was a dedicated friend and a good amateur. Friends throughout the world will acknowledge this. Bob liked to build in particular he loved experimenting with antennas (quads and the bobtail curtain his favourites). His collection of technical information was proof of this consuming interest. (Need information? "See Bob" was the saying). Bob had recently taken the plunge into Packet Radio, this occupying lots of his spare time.

His many friends in Australia and overseas will miss him from their regular scheds.

We send our collective sympathy to Brenda, his wife, and Emmy his beloved daughter.

David VK5NU  
Max VK5KDE  
Dave VK5ADE

ar

### Bill Hehir VK3RE

It is with regret that we record the passing of Bill Hehir, VK3RE on the 26th August 1992, at Hamilton, aged 80. Bill was born at Richmond Vic. After completing an engineering degree at university, Bill became a member of the Institute of Radio Engineers in April 1935. On the 22nd August 1935, he received his AOCF August 1936 saw an experimental wireless station with authorised transmitting of 25 watts for a fee of £1-10-0.

February 1938 saw Bill with his Broadcast Operators Certificate of Proficiency. The same year he took up flying, after a friend Eddie Connellan, had taken him for

# Over to you — Members Opinions

All letters from members will be considered for publication but must be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

## WICEN

Although reluctant to prolong discussion of WICEN issues already covered, I feel compelled to respond to the wildly inaccurate letter from VK2SKY in September 92 AR.

Firstly, far from requiring amateurs — after notifying specified authorities of an emergency — to "stay out of the way", paragraphs 18-24 of RIB72 instruct them to remain involved in any way practicable, and to assist if required.

Secondly, if VK2SKY understood our laws, he would know that where Federal and State laws conflict, Federal laws prevail. Consequently, additional State restrictions on communications would be invalid.

Thirdly, amateurs not already part of recognised emergency services would not seek uninvited participation in emergency operations. Rather, after indicating their availability, they would await the decision of authorities as to whether to use them. However, where their use could be advantageous, rejection of their services on any grounds by authorities would have to be justified in the light of subsequent events.

Finally, there is no way I will sit quietly in a corner when individual rights are threatened. Those who know me are aware that I have never done so.

S V Ellis VK2DDL  
82 Taree Street  
Tuncurry, NSW 2428

## WICEN a Vocal Minority?

Only one in 20 NSW amateurs is a member of WICEN (letter from S V Ellis VK2DDL, AR Oct '92).

Only one in 100 Australian amateurs took the trouble to respond to DoIC concerning the new licence conditions (WIA News, AR Sept '92).

Only one in 18,000 Australian amateurs "bagged" WICEN three times this year in the pages of AR.

Talk about a vocal minority! For heaven's sake, Stanley, who rattled your cage?

Richard P Murnane VK2SKY  
Local Co-ordinator, Manly-Warringah  
WICEN (NSW) Inc  
(Editors Note: Further discussion on this topic would seem unlikely to be beneficial, so this correspondence is now closed .... VK3ABP)

## HF Predictions

Congratulations on the new HF Predictions tables by Evan Jarman VK3ANI.

The tables are excellent, but I have one complaint! You need a magnifying glass to read them as the figures are very small and compacted.

These tables are sufficiently important to warrant a spread over two pages.

Sydney Bookner VK5VN  
The Coach House  
1 Atkinson Road  
Crafrers, SA 5152

(Editor's note: The very fine print and compaction were not intended, and resulted from technical difficulties. We hope the matter is now resolved. .... VK3ABP)

## VK2 Management

Recently the NSW Council of the WIA asked its members:

- 1) What needs to be done to improve services to members?
- 2) Who will do it?

As I see it, the council needs a professional full-time manager/secretary. While the Division is about amateur radio, the administration should not be amateur. The Council members may be well meaning, but they obviously do not have administrative skills.

A full-time manager could co-ordinate the division's needs and implement the policies of the council. His presence would allow the owners of 109 Wigram Street to utilise their property much more.

The question, of course, is where is the money coming from?

The NSW Division should consider breaking away from the present system whereby all the members' money goes to Victoria. The NSW members should be able to pay their fees direct to their own division, which could then forward a small amount for Federal funding.

Members could then subscribe to Amateur Radio magazine if they wished to.

Similarly, a full time paid manager could handle the QSL bureau performances and operation — preferably both on the same site.

John Saunders VK2IDEI  
8 Toni Crescent  
Ryde NSW 2112

## Reply to John Saunders

Your suggestion that a full-time manager/secretary be hired by the NSW Division is one that is under consideration by the Council. It has, in fact, been considered by previous Councils in recent years.

However, it is implicit from your letter that having a paid manager/secretary would somehow magically solve the Division's "administrative problems", which you haven't enumerated.

Your perception that "all the members' money goes to Victoria" is erroneous. By "Victoria", I assume you mean the Federal Office.

Membership money is paid to the Federal Office by agreement of all Divisions, the Federal Office providing membership record administration at a single central point, among other agreed-on services, such as publishing AR. A proportion of each membership fee goes to the Federal WIA for running the Federal Office, international representation, etc, and the remainder remitted to the Division. All this was agreed to over 20 years ago.

If, for arguments sake, the Federal Office were located in Sydney, what then would be your claim about where members' money goes?

The VK2 QSL Bureau operation is the largest in Australasia, with over 350,000 cards passing in and out annually. In recent years, Council has considered at length various options for restructuring the Bureau operation. On the administrative side, the late Reg Brook VK2AI (a Councillor) made considerable progress in upgrading the Bureau's administrative operations, with the help of a few dedicated members, to the general satisfaction of users.

The whole Bureau operation is too complex to be handled alone by one person, without going to an automated or semi-automated operation, which cannot be afforded at this time. In suggesting a manager/secretary could handle the Division's administration and the Bureau operation, I believe you fail to appreciate just how much work the current Bureau volunteer team puts in.

Roger Harrison VK2ZTB  
Vice President

## Travellers Net

Having just returned from a 14,000km trip to the top end and central Australia, I thought I should put pen to paper and reflect on some aspects of AR learned from our wanderings.

Those familiar with these parts of Australia will appreciate the vast distances between settled areas and so, not surprisingly, 2m FM is of limited value in anywhere but the major settlements.

Many (read hundreds) of local vehicles are adorned with HF antennas either multi-tapped helicals or base-tuned verticals. In spite of the advances in satellite technology, HF radio is still the favoured mode for mobile communication.

And so it was in our case. Both HF and VHF were taken - a TS120V (yes V) and a set of helical whips about one metre long, gutter mounted, and the ubiquitous five-eight-hertz wave for two metres.

With this set-up we regularly checked into the 14.116 MHz travellers net run by Roy VK6BO and Peter VK6HH. This net allowed us to regularly report our progress and/or destination and provide a reliable access point should family or friends in VK3 need to reach us. Our thanks to the net for its umbrella.

While the major roads are in superb condition, many lesser roads are corrugated to an extent that your fillings nearly shake loose. Radio installations need to be fairly rugged - don't use self-tappers or plastic fittings. Do bolt equipment down using nuts, bolts and spring washers.

Liberal coat cable entries/fittings with silicone grease or similar, and ensure coax connections can't work loose (they do!). Finally, regularly check the system - you'd be surprised how quickly fittings come adrift on rough roads.

I would encourage amateurs who haven't seen the centre or "top end" to consider doing so. You don't need a four-wheel-drive vehicle to visit 90 per cent of the "tourist" areas - the family sedan is quite adequate. Take along your HF gear - there are daily nets on 21 MHz as well - to provide some extra security, and your 2m gear to chat to the locals in the "bigger" towns!

The NT Tourist Bureau is well equipped to provide you with ample printed information, and the larger national parks are well documented - so away you go, but give yourself six or eight weeks to take in the sights this part of the country has to offer.

Danny McManus VK3NG  
23 Alexandrina Road  
Mt Martha, Vic 3934

## SS "Mantua" - Thank You

Thank you, Arthur Brown, for your interesting article on the SS "Mantua" (AR September 1992). You state that, in 1938, the main transmitter on the SS "Jervis Bay" was spark and the back-up transmitter was valve. The radio equipment on the MV "Manunda", when I joined her as 3rd RO in August 1940, was the reverse of this. The main transmitter was valve and the emergency transmitter was spark.

The valve transmitter used only one valve, to the anode of which was applied about 10,000 volts of "raw" AC. This alternating current had a frequency of about 800Hz

(cycles per second in those days) and the valve conducted on the positive half-cycles. The negative half-cycles simply didn't go anywhere. The alternating current was generated by an inductor alternator, mounted on the same base and driven by a 220-volt DC motor. The speed of this motor could be varied to some extent, and this in turn varied the note emitted by the transmitter. This was "interrupted continuous wave" (ICW). Later transmitters used "modulated continuous wave" (MCW). At that time, all communications with ships at sea was in Morse code; there was no such thing as voice communication - that came much later. The transmitter operated on 600, 700 and 800 metres. (We talked in metres in those days, now only amateur operators talk in metres). The actual wavelength transmitted was determined partly by the aerial constants and partly by coils and condensers within the transmitter, selected by controls on the front panel.

A 100-watt spark transmitter was the emergency stand-by. This was operated from 24-volt lead-acid batteries which drove a DC motor/inductor alternator combination.

George Craggs VK2AYG  
56 Oatley Park Avenue  
Oatley, NSW 2223

## Name Change

Much has been written on this subject and I don't want to labour the point, but not one of the protagonists seems to have given any thought to the costs involved. Every document in regular use would have to be reformatted, the Corporate Affairs Commission would become involved, the constitution would have to be rewritten involving a referendum of the membership.

There are a lot of other expenses I have probably missed, and all this just because somebody thinks the name is old-fashioned. After all, cuffs on trouser legs will probably become fashionable once more.

B L McCabbin VK3JO  
3 Kildare Street  
Burwood, Vic 3125

## Compulsory Membership

I would like to support comments made by Ted Ross VK4TR concerning the compulsory membership of the WIA by all licensed amateurs (AR Aug '92). This would guarantee 100 per cent membership by licensed operators.

To keep the cost within reason, I would suggest a fee for combined licence and WIA membership only. AR should be an optional extra, and run as a profit making commercial enterprise if possible.

Sally Grattidge VK4MDG  
Clark Road  
Majors Creek  
Woodstock, Qld 4816

## Mathematics in AR

As a long-time user of mathematics I know the advantage of fluency in that language and the disadvantages of a lack of fluency. The article, "Writing for AR", in the August edition, attempts to argue the case for verbal and geometric statements, rather than maths. This letter is an argument in favour of mathematics.

Any logical reasoning which can be done verbally or geometrically can also be done mathematically, but the accuracy essential for technical and scientific purposes can be achieved only with mathematics.

Our education institutions deplore the fact that many students do not develop their maths knowledge to a level suitable for advancing to tertiary level. Much of their poor development can be attributed to the lack of encouragement outside their classrooms. The unsupported statements in the "Writing for AR" article are examples of disincentives which should not appear in the journal of a society which claims to support "self-training and technical investigation".

The editorial preference for non-mathematical texts is dictated by considerations of convenience, economy and the skills and techniques available to them. I find that reproduction of even simple maths statements is beyond the capability of keyboard operators (and their keyboards?) and many proofreaders cannot detect maths mistakes. Efforts and upgrading of techniques to overcome those and other difficulties would help to interest a wider section of the amateur community in the technical content of AR.

AR is not required to educate professors or to entertain children; it should cater for the middle, most populous level of technical literacy, those people who are not scared of maths and prefer it to the almost incomprehensible verbal substitutes offered by "popular authors".

Lindsay Lawless VK3ANJ  
Box 112  
Lakes Entrance, Vic 3909

## Help Still Wanted

Some months ago we sought contributions from amateurs to our Dictionary of Biography of Western Victoria. We are most appreciative of the help given by those who responded, not only from VK3, but also from other VK areas. If other amateurs would like to contribute, we will be only too willing to send details of the Dictionary of Biography on request.

We probably lack information about amateurs who contributed in a quiet way to the service and to their community. As an example in a different field, when the Rural Fire Brigades are mentioned there is a chorus of "Hugh O'Rourke" because of his

immense contribution to the art of fire-fighting in Western Victoria. We are probably lacking in information about other VLS so we would be pleased to hear of VLS and other rural brigade people who should be included.

I have some specific requests. Firstly, we have access to some material about 3YB, the train-mobile FM broadcast station, but very little about the operators. We need information about Western District people who were part of 3YB before it became fixed.

Secondly, the first "Call Book", the 1914 WIV "Wireless in Australia", lists four ex-pmenters for this region:

XXJ L Osburne, Terang  
XLO T J Entwistle, Camperdown  
XMS W Bishop, Queenscliff  
XJDV T A Crerar, Hexham

We have no biographical material about them.

Finally, we seem to have missed out on some amateurs who have made notable contributions to the Western District, perhaps because people thought they would simply be duplicating other material. For example, we need a biography of VK3TW whom many people remember as the broadcast life of 3HA.

Again, thanks for your interest, and we will be pleased to receive more contributions.

**Ros Lewis VK3YMR**  
Centre for Australian Studies  
Faculty of Humanities  
Deakin University, Vic 3217

## The HF Marine Earth

Richard VK2XRC's article on dissimilar metals (October 1992 AR), set my mind back to when my work included the electrical and electronic maintenance on a series of customers' pleasure boats. During the times when the corporate chequebook had a bottomless limit, a new vessel appeared with all the accessories still to be fitted.

A HF marine transceiver and tuner was one of the accessories!

The required location for the tuner was above the cabin window line with the whip antenna just above on the side of the fly bridge. This was some distance from any effective earth. The HF installation on the previous boat came with it and was a poor performer, so I was determined to achieve a result this time. Asking around I found the secret of a good marine HF installation was a substantial path between a tuner and the ocean below. It is tempting to use a stranded insulated cable for ease of installation, but this becomes a good inductor, depending upon its cross-sectional area. Richard referred to the need for a heavy copper strap.

Ideally, the tuner would be nice directly on the point of earth contact with the ocean

earth, either the through keel metal points or the capacitance point, where a metal mesh is sandwiched into fibreglass construction. However, it is not very practical to locate the tuner down in the bilge. Instead, one has to transfer this earth point to the tuner and the transceiver by a path of least inductance. This means a large cross-section in the earth strap.

The vessel I was fitting out was of fibreglass construction with twin engines. The props were unsuitable due to short shafts and flexible couplings. This left only the twin rudders which, fortunately, were metal. Whether the right metal, I don't remember. An examination of the boat's construction showed, although difficult, there were channels in the mouldings from

the stern, under the deck, up the sides into the space between the cabin roof and the fly deck floor. I was able to obtain a roll of about 20-gauge copper sheet 300mm wide. The space available was about 150mm along many of the joints. This copper was split into 150mm strips, and it was fairly easy to feed up to the tuner. A copper braid, similar to the older battery straps in cars, made the connections at both ends. The resulting HF signal, both ways, was impressive. The boat owner was able to outdo all his mates, and didn't let him know!

**Tim Mills VK2ZTM**  
PO Box 204  
Willoughby, NSW 2068

## Pounding Brass

Gilbert Griffith VK3CQ 7 Church Street Bright Vic 3741

Morsum Magnificat is one of the very few Morse Magazines available anywhere in the world and will be 10 years old in 1993. You can subscribe by contacting Geoff Arnold G3GSR, 9 Wetherby Close, Broadstone, Dorset BH18 8JB England. Tony Smith G4FA1, (consultant editor) has written with information on the new changes to the UK Amateur Morse Test.

## Changes to UK Amateur Morse Test

Britain's radio licensing authority, the Radiocommunications Agency, has announced changes to the format of the 12 wpm Amateur Morse test. Following the success of the 5 wpm Novice test introduced last year, it has been decided that the 12 wpm test should also be in a QSO format. This is considered to be better at preparing candidates for the sort of operating conditions they can expect to encounter on the air.

The existing test, although an efficient method of assessing the ability of a candidate to read English plain text at 12 wpm and figures at a slower speed, says the Agency, falls far short of preparing anyone to actually understand a live message on the air. Most successful candidates cannot read mixed letter and figure groups, which means that they cannot read call signs and are therefore incapable of communicating on the air using Morse code.

The new style test will be available from 1st January 1993, but candidates who have studied under the old format will be able to take the old style of test until 31st March 1993, when the new test will become compulsory.

As from 1st January 1993 a new procedure for the identification of candidates will also be introduced. Instead of written proof of identity, candidates will be required to bring to the test centre two recent passport size photographs of themselves. In the new test, the candidates will receive a minimum of 120 letters and 7 figures in the form of a typical exchange (QSO) between radio amateurs. A manual Morse key will be used to send the message, which will last approximately 2 minutes and 30 seconds. A maximum of 6 uncorrected errors will be permitted.

In the sending test, the candidate will send a given text, on a hand key, comprising not less than 75 letters and 5 figures, also in the form of a typical QSO. This will last approximately 1 minute and 30 seconds. There must be no uncorrected errors in sending and no more than 4 corrected errors will be allowed.

The test can include any of the following abbreviations, Q-codes or procedural characters. AGN, ANT, BK, CPI, CPY, CQ, CUL, CW, DE, DR, EL, (?) ES, FB, FER, GA, GD, GE, GM, HPE, HR, HVE, HW, K, MNI, MSG, NW, OC, OM, OF, PSE, PWR, R, RKPT, RST, RX, SIG, SRI, TEMP, TKS, TNX, TU, TX, TXR, UR, VERT, VY, WID, WX, XYL, YL, 73, 88

QRA, QRG, QRK, QRL, QRM, QRN, QRO, QRP, QRQ, QRS, QRT, QRX, QRX, QRZ, QSA, QSB, QSL, QSO, QSY, QTH, AR, BT, CT, KN, VA, 2, 7, Erase

Both the 5 wpm and the 12 wpm tests are conducted by the Radio Society of Great Britain on behalf of the Radiocommunications Agency

Back in July this year I mentioned some



items of punctuation and their Morse characters. Martin VK6ANE has sent me the following punctuation marks and miscellaneous signs printed in a manual for the maritime mobile and maritime mobile-satellite service, published by the general secretariat of the ITU in 1976.

full stop	----- (AAA)
comma	----- (MIM)
colon or division sign	----- (OS)
question mark	----- (IMI)
apostrophe (minute)	----- (WG)
hyphen, dash or subtraction	----- (DU)

fraction bar or division	----- (DN)
left-hand bracket	----- (KN)
right-hand bracket	----- (KK)
inverted commas	----- (AF)
double hyphen	----- (BT)
understood	----- (SN)
error	-----
cross or addition sign	----- (AR)
invitation to transmit	----- (K)
wait	----- (AS)
end of work	----- (VA)
starting signal	----- (NK)
multiplication sign	----- (X)

According to Martin the rarity of occurrence of the other undefined symbols does not warrant memorising (I agree) and that the symbol & could be sent simply as "and" or "es", and \$ "DLR" etc.

I must admit, and I am sure that you will agree, that it is often quicker and easier to spell something out the longer way in plain English the first time around anyhow.

Thanks to the others who sent in symbol codes from various sources (all older than 1976) from as early as 1918 too!

BT

## QSLs from the WIA Collection

Ken Matchett VK3TL Hon Curator WIA QSL Collection

4 Sunrise Hill Road Montrose, Vic 3765 Ph: (03) 728 5350

### Rotary and Amateur Radio Share Common Ideals

Particularly since the Second World War, many amateur radio operators throughout the world have made mention of both their occupation and interests. Sportsmen and sportswomen, firemen, policemen, scout leaders and many others have shown their interests on their own QSL cards. Rotarians are no exception. Rotary is the world's oldest International service organisation. There are now more than one million service-minded business and professional leaders in Rotary, and over 25,000 Rotary clubs in more than 170 nations. In Australia alone, there are over 1300 clubs, with a membership exceeding 100,000.

### ZS5DRC

Rotary was founded in 1905 by Paul Percy Harris, a Chicago lawyer who wanted to establish the principle of service and fellowship amongst his business acquaintances. His motto was "Service Above Self". The name "Rotary" is derived from Paul Harris' custom of meeting with close friends on on a weekly basis at their respective offices in rotation. The idea quickly spread, the first club outside the USA being Dublin, formed in 1911, followed closely by London. Most people know of Rotary through its community service embodying such projects as the provision of playground facilities, meals on wheels, visitation programs and the like.

Weekly meetings of Rotarians are the rule by which the expertise and experience of men in various occupations can be utilised in carrying out the ideals of Rotary. District Rotary Conferences (DRC) are conducted at local level, the QSL of ZS5DRC being an especially allocated callsign for such a conference held in Port Shepstone,

South Africa. The slogan "International Friendship through Amateur Radio", which appears on many QSL cards, is linked with the ideals of Rotary itself. In the centre of the card can be seen the toothed wheel which is the symbol of the Rotary movement.

### Port Shepstone Rotary Club

Host Club DISTRICT 230 17th-21st March In the CONFERENCE 1968

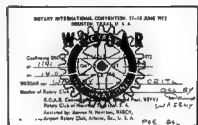
# ZS5DRC

"International Friendship through Amateur Radio"

### WR5OAR

The WR5OAR card is another special event QSL. This one celebrated an international Rotary convention in Houston, Texas, and was sent to the writer when he was operating out of Nauru Republic as C2ITL during 1972. The acronym ROAR stands for "Rotarians of Amateur Radio" which, as the name suggests, are associations of licensed amateur radio operators who are also Rotary Club members. The considerable work done by Rotary in the international field is probably not as well known to the general public as it should be. Many millions of dollars are raised annually by Rotarians for international relief, particularly of disease and illness (eg Polio Plus campaign), the provision of food and housing, as well as supporting campaigns for the fight against illiteracy and natural disasters. The Rotary Volunteer Program provides the opportunity for dentists, doctors, teachers, engineers and others to carry out vital work in the under-privileged areas of the world.

Overseas scholarships and Youth Exchange programs are also offered by Rotary International.



### 6K89ROAR

Radio amateurs are now becoming accustomed to working stations with unusually long call signs such as 6K89ROAR from Korea (do readers remember when, 30 years ago, that strange call sign, UBSARTEK took us all by surprise?). The 6K89ROAR was an especially allocated one and was for the 80th international Rotary conference at Seoul in 1989. The special station was operating for only six days (19-24 May); licensed operators from overseas, being Rotarians, were able to operate the station.

The WIA Collection also contains QSLs of individual members of Rotary who make mention of the fact on their cards, such as G5FH of the Milton district ROAR, and W6SD, who operated on the occasion of the Annual International Amateur Radio Operators' Recognition Day sponsored by the San Fernando Rotary Club. Just as Rotary started in the USA, the Rotarians of Amateur Radio Club had its origin in that



country. It was a movement fostered by the Glencoe Rotary Club of Illinois, USA.

The first Rotary Club established in Australia was the Rotary Club of Melbourne (April 1921). In that year, Rotary Administration HQ in Chicago sent two Canadians, Lt Col Ralston and Mr James Davidson, out to Australia to establish the movement in this country. They landed in Sydney but, because of the Royal Sydney Show week, were obliged to move on to Melbourne. Sydney had to wait another month or so before the Rotary Club of Sydney was formed. Excellent work has been done by Rotary Clubs in all states of Australia, both at local and international level. It was the Sydney club that started the Police Citizens Boys' Clubs. The formation of Administrative Staff Colleges, the building of International Houses at universities, and the establishment of old people's welfare bodies all originated from Rotary. The Victorian Rotary Clubs did pioneer work with the Apprenticeship Scheme.

Ballarat launched its Young Farmers' Club (1926) and Geelong its Apex Club in 1931, (itself now an international organisation of young men with the same ideals as

Rotary). The Brisbane Rotary Club received its charter in 1923. The Mount Isa club established its internationally famous rodeo in order to gain funds for welfare and city improvements.

The Adelaide RC started also in 1923, and played a major role in establishing the Fighting Forces Comfort Fund during WW2, and in its work for crippled children (as did the Hobart Rotary Club, established in 1934). The Perth Rotary Club received its charter in 1926, and was instrumental in organising a central government control for charities, as well as establishing a medical school at the University of WA. Rotary Clubs have also been established in the ACT (1928) and in the NT which, until the 1960s, was linked with South Australia Rotary. Alice Springs' famous "Henley on the Todd" is but one more of the many diverse activities initiated by Rotary for the realisation of its quest for both communal and international service and friendship.

#### Author's Note

These series of articles on the history of amateur radio depend, in part, upon information gained from QSL cards kindly do-

noted by radio amateurs throughout Australia and overseas. Could you help? All QSLs are welcome. Please get in touch with the author, who is also the honorary curator of the collection, if you would like to offer your help.

#### Thanks

The WIA (Vic Div) would like to thank the following for their kind donations of QSL cards: (Supplementary list)

Alf	VK3LC
Vince	VK2VA
Lionel	VK6LA
Mike	VK6HD
"Snow"	VK3MR
Lindsay	VK5GZ
Ivor	VK3XB
Mavis	VK3KS
Barry	VK5BS

Also, thanks to the family and friends of the following "silent keys": (Supplementary list)

Arnold Holst	VK3OH
John Tapper	VK6RJ & VK6OA (courtesy of Barrie VK6BR)
Syd Sim	VK2AVG
George Luxon	VK5RX

BT

## Repeater Link

Will McGhie VK6UU@VK6BBS 21 Waterloo Crescent, Lesmurdie 6076

### Technical Tips

To measure a length of coax running up a tower at a repeater site, usually means a climb up the tower with tape measure in hand, or a rough estimate of the length by comparing the cable length to the height of the tower.

Neither of these methods have ever appealed to me, so in a moment of pure inspiration an idea came from nowhere. Could I measure the capacity of the coax with my recently acquired digital capacitance meter, and from that work out the length?

The cable to be measured was RG 213. A quick look at the specifications of the cable revealed that the capacitance per metre is 101 pF. What a simple value to do the sums in your head. 100 pF is near enough. Measure the coax capacity between inner and outer at one end, and divide this figure by 100, to give you the length in metres. The coax on the site measured 6,440 pF so the length is 64 metres. Measurements with known lengths of cable confirmed the results to be correct. This method only works on cable that has a DC open circuit at both ends. Many aerials represent an open circuit at DC, so it is possible to meas-

ure the length of coax cable even with these types of aerials connected. The capacitance per metre for RG 213 is 100 pF, RG 58 100 pF and DD 450 73 pF.

Expanding on the idea of using a digital capacitance meter to measure cable length, it is also possible to tell where the break in a cable is. If you have a cable, any cable not just coax, that is open circuit, measure the capacitance between the conductors at each end. A few picofarads at one end means that the break is at that end, probably the connector. Even a break part the way along a cable can be estimated. If you read 40 pF at one end and 60 pF at the other, then the break is 40% down the cable from the 40 pF end. Great piece of test gear the digital capacitance meter.

### UHF Diplexer

The need to run two link frequencies from the one site will occur more and more as repeater linking grows. The link frequencies usually being 420 and 440 MHz. With such a large spacing of 20 MHz between these frequencies, it is not too hard to run them into separate antennas only a few metres apart, without any interaction. However the need for a second antenna is not always easy on crowded radio masses.

It is possible to duplex the two link transceivers together into one aerial with the aid of two cavity filters. I tried joining two 4 inch UHF cavity filters together with a T piece, and from this point connecting the aerial. The link transceivers were connected to each of the remaining ports on the cavity filters. To put it another way, place a cavity filter in each transceiver aerial lead, one tuned to 420 MHz and the other to 440 MHz, then join the outputs of each filter to a T piece, and then to the aerial.

The isolation between the transceivers is 40 dB, more than enough at 20 MHz separation to cause no desensing to either. The T connection must be as short as possible, otherwise this connection reflects an impedance other than 50 Ohms. This is because each transceiver after passing through its respective cavity sees an open circuit presented by the other filter.

If the length of the connection to the other filter approaches a quarter of a wave length, then a low impedance is reflected back. Connecting this simple diplexer to a broad band UHF link antenna can solve some of the overcrowding on your repeater site when two link frequencies are required.

BT

# Spotlight on SWLING

Robin L. Harwood VK7RH 52 Connaught Crescent  
West Launceston Tas 7250

In last month's column, I stated that Tasmania was, at last, going to synchronise the dates when Daylight Saving commences in those mainland states. Sadly, it was wishful thinking, because the Tasmanian Government did an about-face, deciding to stick with the six month period from the beginning of October, to the end of March. This puts Tasmania out of step for almost two months a year. The commercial community and electronic media are naturally annoyed for it increases costs, while the tourist lobby are delighted at the decision.

It is going to be confusing with Queensland, WA, and the Northern Territory all on Standard Time, while NSW, Victoria and SA being on Daylight Saving Time for four and a half months, and Tasmania being on it for half the year (there has even been a proposal by a "Green" state MP for this state to be permanently 11 hours ahead of Greenwich). Will the Federal Government use its external powers under the Federal Constitution to legislate some sanity into our time zone standards?

While we are on Daylight Saving — both the UK and the USA reverted to Standard Time on the 29th of October, while the Brazilians also went to Summer time at about the same time.

It has been confirmed that both the BBC and Radio Netherlands have signed agreements with the Russians to utilise former jamming senders to relay programming into China and the Indian sub-continent. No commencing date has been given yet. The BBC is also being relayed over the RSA transmitters at Meyerton, South Africa. Frequencies in the 16 and 19 metre bands are being employed to target central and eastern Africa. Incidentally, Radio RSA is now known as "Channel Africa" and external broadcasts are confined to the African continent.

I don't know if Radio Japan is still using the BBC site in Skelton.

When the new European winter schedules came into force at the end of September, the 9770 English program at 0700 UTC from Tokyo was missing. They maybe are using a higher frequency. I will listen to the Radio Japan relay from Moyabi, Gabon on 21700 kHz and see what channels are being used. The regional broadcasts to Australia from Tokyo continue on 15270 at 0900 UTC. 11815 is also a good back-up channel, although directed to Asia.

As you are possibly aware, Czechoslovakia is going to become two separate and independent nations, as from January 1st. The external service of Czechoslovakia — Radio Prague, was retitled to become Radio Czechoslovakia International. Now what the future holds and who gets this and that in the way of senders, studios etc, has yet to be determined. However, listeners can follow developments over Radio Czechoslovakia International in English, at 0700 UTC on 7345,9505 and 11990. The signal level on the latter channel is excellent.

Another interesting trend I have recently noted from American shortwave religious

broadcasters, is to use non-standard allocations outside of the international broadcasting bands. KHBI in Sapan uses 17555 to broadcast the "Herald of Christian Science" at weekends. WWCR in Nashville Tennessee has used 7435, 12160, 15690 and is now heard on 13815 kHz from 1100 UTC. WHRI in Indiana is trying to lure listeners and monitors away from WWW/WWVH by transmitting on 9985. Listen around 0530 UTC. The new Catholic-based "Eternal Word Network" — WEWN is reportedly going to use 18930 kHz at various times. Apparently a small allocation was made at WARC for broadcasting to use this segment, sometime in the future. WEWN may be the first station there. They are scheduled to commence on Christmas Day.

Well that is all for this month. Just a reminder that news can now be forwarded to me via Packet. The address is as follows: — VK7RH @ VK7BBS Launceston TAS AUS. OC. 73 DE VK7RH.

## Truckie's Travels

Ian Rosser VK2WAG 13 Penworth Close Wyoming, NSW 2250  
(An occasional column of road and radio bits and pieces!)

Wonder of wonders, even burnt-out truckies are occasionally allowed holidays. Recently, Barbara and I were able to take a whole WEEK off!! During this time (you guessed it) we went for a drive ... that was a change for me!

One thing I learned was that unless you have really good access to the local digipeater, you better use something a little better than a quarter-wave on a handheld! I was situated at the Bendemeer Pub, and I reckoned on having a really good "shot" at RTM ... Result: not a sausage heard. Next time the better half can expect an outdoor half-wave device included in the list of must takes!!!

If you happen to be visiting the Tamworth, NSW, area, I would thoroughly recommend taking a wee small drive out to the village of Nundle! They say it's historic, and they're not wrong. Whilst in the Nundle district, go an extra half hour up into them thar hills, and have a look at Hanging Rock. I tell you, it will take your breath away — so will the view!! We went there in early June and it was just a little nippy. Just through the village there is a little dam that is most pleasant for a barbecue. Fireplaces are provided, and there is no shortage of wood for the fire.

If you happen to be travelling in the Tamworth area, don't be frightened to give them

a call on the local repeater (146.750). They are a bit slow to come forward, but when they do you are assured of a little reprieve to occupy your time whilst travelling. Notable calls are VKs 2 ZOO, KDK, UNE, FMT, VP, BBD, JUG (a commercial traveller), BGR, and a cast of thousands!

VK2BGR — now there is a thorough gentleman (if ever there was one). I'm sure Geoff wouldn't mind me saying this; for a man who is totally blind in one eye, and can't see much out of the other, he has an extraordinary ability to get the most difficult things done! Geoff informs me that the worst thing about being nearly blind is the summer scenery ... if you know what I mean. My thanks to Geoff and Heather for putting up with us in their home

## The Voice of Experience

If you are travelling anywhere though western NSW at the moment, either fit an enormous bull-bar (such as is on my Kenworth), or travel only after about 0900 hrs local, and even then with great care. Fair dinkum, the roos are in plague proportions, and it doesn't matter how slowly you drive, I've had them commit suicide by charging head-first into the truck — and that's no bull.

# WIA Divisional Bookshops

The following items are available from your Division's Bookshop  
(see the WIA Division Directory on page 3 for the address of your Division)

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QRP Note Book - DeLam - ARRL	£20355	Antenna Code 67 - 665-675 WPM Code Course - Gordon Vival	£20290
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Advanced Morse Tutor - 5.25 Disk	£20362	Antenna Code 74 - 735-745 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20363	Antenna Code 75 - 745-755 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20364	Antenna Code 76 - 755-765 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20365	Antenna Code 77 - 765-775 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20366	Antenna Code 78 - 775-785 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20367	Antenna Code 79 - 785-795 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20368	Antenna Code 80 - 795-805 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20369	Antenna Code 81 - 805-815 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20370	Antenna Code 82 - 815-825 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20371	Antenna Code 83 - 825-835 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20372	Antenna Code 84 - 835-845 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20373	Antenna Code 85 - 845-855 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20374	Antenna Code 86 - 855-865 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20375	Antenna Code 87 - 865-875 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20376	Antenna Code 88 - 875-885 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20377	Antenna Code 89 - 885-895 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20378	Antenna Code 90 - 895-905 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20379	Antenna Code 91 - 905-915 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20380	Antenna Code 92 - 915-925 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20381	Antenna Code 93 - 925-935 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20382	Antenna Code 94 - 935-945 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20383	Antenna Code 95 - 945-955 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20384	Antenna Code 96 - 955-965 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20385	Antenna Code 97 - 965-975 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20386	Antenna Code 98 - 975-985 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20387	Antenna Code 99 - 985-995 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20388	Antenna Code 100 - 995-1005 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20389	Antenna Code 101 - 1005-1015 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20390	Antenna Code 102 - 1015-1025 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20391	Antenna Code 103 - 1025-1035 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20392	Antenna Code 104 - 1035-1045 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20393	Antenna Code 105 - 1045-1055 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20394	Antenna Code 106 - 1055-1065 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20395	Antenna Code 107 - 1065-1075 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20396	Antenna Code 108 - 1075-1085 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20397	Antenna Code 109 - 1085-1095 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20398	Antenna Code 110 - 1095-1105 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20399	Antenna Code 111 - 1105-1115 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20400	Antenna Code 112 - 1115-1125 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20401	Antenna Code 113 - 1125-1135 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20402	Antenna Code 114 - 1135-1145 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20403	Antenna Code 115 - 1145-1155 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20404	Antenna Code 116 - 1155-1165 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20405	Antenna Code 117 - 1165-1175 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20406	Antenna Code 118 - 1175-1185 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20407	Antenna Code 119 - 1185-1195 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20408	Antenna Code 120 - 1195-1205 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20409	Antenna Code 121 - 1205-1215 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20410	Antenna Code 122 - 1215-1225 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20411	Antenna Code 123 - 1225-1235 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20412	Antenna Code 124 - 1235-1245 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20413	Antenna Code 125 - 1245-1255 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20414	Antenna Code 126 - 1255-1265 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20415	Antenna Code 127 - 1265-1275 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20416	Antenna Code 128 - 1275-1285 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20417	Antenna Code 129 - 1285-1295 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20418	Antenna Code 130 - 1295-1305 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20419	Antenna Code 131 - 1305-1315 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20420	Antenna Code 132 - 1315-1325 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20421	Antenna Code 133 - 1325-1335 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20422	Antenna Code 134 - 1335-1345 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20423	Antenna Code 135 - 1345-1355 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20424	Antenna Code 136 - 1355-1365 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20425	Antenna Code 137 - 1365-1375 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20426	Antenna Code 138 - 1375-1385 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20427	Antenna Code 139 - 1385-1395 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20428	Antenna Code 140 - 1395-1405 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20429	Antenna Code 141 - 1405-1415 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20430	Antenna Code 142 - 1415-1425 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20431	Antenna Code 143 - 1425-1435 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20432	Antenna Code 144 - 1435-1445 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20433	Antenna Code 145 - 1445-1455 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20434	Antenna Code 146 - 1455-1465 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20435	Antenna Code 147 - 1465-1475 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20436	Antenna Code 148 - 1475-1485 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20437	Antenna Code 149 - 1485-1495 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20438	Antenna Code 150 - 1495-1505 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20439	Antenna Code 151 - 1505-1515 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20440	Antenna Code 152 - 1515-1525 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20441	Antenna Code 153 - 1525-1535 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20442	Antenna Code 154 - 1535-1545 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20443	Antenna Code 155 - 1545-1555 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20444	Antenna Code 156 - 1555-1565 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20445	Antenna Code 157 - 1565-1575 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£20446	Antenna Code 158 - 1575-1585 WPM Code Course - Gordon Vival	£20290
Advanced Morse Tutor - 5.25 Disk	£20447	Antenna Code 159 - 1585-1595 WPM Code Course - Gordon Vival	£20290
Morse Code - The Essential Language	£20448	Antenna Code 160 - 1595-1605 WPM Code Course - Gordon Vival	£20290
Morse Code 2 Tapes Novice Code Course - Gordon Vival	£20449	Antenna Code 161 - 1605-1615 WPM Code Course - Gordon Vival	£20290
Morse Code 6 Tapes 15-20 WPM Code Course - Gordon Vival	£20450	Antenna Code 162 - 1615-1625 WPM Code Course - Gordon Vival	£20290
<b>MORSE CODE</b>			
Advanced Morse Tutor - 3.5 Disk	£204		

# VHF/UHF An Expanding World

Eric Jamieson PO Box 169 Meningie SA 5264

All times are UTC

## Regarding prefix MD5

In September AR I mentioned the prefix MD5 was unknown to me. I have received two responses, from Roger Pullen VK5ZKK, and Bob Oldfield ex VK0RO, now VK3UY/VK3EFD. Both have confirmed MD5 as being that of the post war occupation forces of the Suez Canal Zone, being in addition to the usual SU prefix for Egypt. Roger sent me a copy of the ARRL Handbook DXCC Prefixes for 1950 which confirms his statement, whilst Bob said that the prefix still existed in 1958 at the time of his stay in the Antarctic. It is interesting to note that in 1950 the International Prefixes block MAA-MZZ was allocated to Great Britain, in addition to GAA-GZZ and ZAA-ZZZ. In 1992, in addition to those mentioned, the UK also has been allocated VPA-VSZ, ZBA-ZJZ, ZNA-ZOZ and ZQA-ZQZ. Thanks, I appreciate your interest and information.

## News from Cairns

John VK4TL from Malanda QH22, near Cairns, has written to say that due to the regulations in regard to operating within a Channel 0 area, he ceased operating on six metres in June 1989 and did not resume until October 1991, after the Ch 0 translator at Gordonvale ceased operation.

Since then he has lifted his countries score to around 45. His last European contact was ON4ANT on 9/5/92; new countries worked have been — 10/5 ZK3TPY, 15/6: JU830C and 9/8: NH6YK/KH4. Recent openings to JA have occurred on 16/6, 12/7, 6-8-10-21-22/8 and 8/9. John does not believe six metres is finished and is expecting to work Europe again.

John says he has semi-retired and will be moving to the perfect amateur radio site on the Atherton tablelands, two-thirds of a hectare of land with 360° views, not a house in sight and no electrical interference! His former 9.1 m tower has been extended to 15.2 m and will support the TH6 and the 5 element six metre beam. A second tower will support A2-El satellite antennas.

QSLs for JD1BFI now go through his QSL manager JA5FFJ

Anyone with access to the JA CQ ham radio magazine should note on pages 222/223 the photographs of VK4s TL, ZJR, FP, ABW, TUB, FNQ, ZAZ, ZAA,

ZJB, KU, ZAL and 2BBR. These were taken by Yutaka JHIWHS during his recent tour of Queensland using the callsign VK2WHS/4.

## Repeat contacts — again

John VK4TL would like to voice his comments about second contacts with DX stations, which has been the subject of some discussion in these columns during recent times, and where I said that at times there would appear to be extenuating circumstances for a station to be called again. He says For example, 9H1 station calling CQ; after working him I can still hear him coming through two hours later but with no contacts.

He has a pipeline into Cairns and nowhere else. In the amateur spirit I am duty bound to call again to reassure him that his signal is still OK and he has propagation to this area. This isn't the only such example, others have included NH6YK/KH4 and JU830C being heard for more than an hour on various nights but only making the occasional QSO.

I think the point being made by those stations not seeking second contacts arose from when propagation was not restricted to a limited area, and they had to work through a string of previously worked stations before being allowed to seek stations elsewhere. I know the ZLs were furious at having to stand by on their only reasonable opening to Europe, whilst VKs who had previously worked Europe, did so again!

However, there is no simple answer which will suit all occasions and there never will be. I suppose the best that can be asked is for operators to act in the true amateur spirit and be prepared to share contacts with other areas.

## The UK report

Ted Collins G4UPS, says that George PA0FM, will spend the European winter in Aruba as P43FM, from November 1992 until March 1993. QSL via his home address.

Ted supplies a list of 42 EH stations from Spain who were worked or reported until 31 August, so it seems a lot of stations were waiting on the side ready to operate the moment permission was given to do so.

In general, Ted's August report indicates a considerable reduction in six metre con-

tacts, no doubt due to the disappearance of Es as their summer progresses. Best days appear as 10/8: SM1LPU, OK2/YU, HF7PAR, SR3PAR, YU3GO, EH2ACZ, EH2BLR, CT0WW/b, 19/8: OH1LEU, OH3ME, LA9ZY, OKIMAC, SM0CHH, SM7FJE, YU3DKS.

Big opening on 25/8 from 0640 to 2110, with 4N3SIX/b, YU3UF and others, DJ1JU, 9A1CCY, SV1UN, 14RRZ, IYK, OE, OK, EH3IH and many others, F8IH, GB3LER/b, YU1EU, V51VHF/b, heard ZS9A working CT1LN, ZB0T, CT0WW/b, ES6PZ, SM1LPU, OH1SIX/b, OG1AF, LA5TA and others, OZ1CIS/A. Much the same conditions prevailed on 28/8 and 30/8 with the most prominent stations being from LA, SM, OH, OZ, ES and I.

Geoff GJ4ICD had a quiet month due to holidays and work, but says he has written to 3V (Tunisia) to try for a permit for spot frequencies of 50.110 and 28.885 MHz for an expedition in 1993. He says his final country count on six metres stands at 137 confirmed and still awaiting two confirmations from YU to make 139.

GJ August report TEP to 7Q7RM, while GWN7NGP worked nineteen countries during the August Perseid meteor shower, all via SSB/MS.

## Report from G3WOS

Chris Gare G3WOS in Hampshire, sent a letter in August which I had to hold over, saying After reading your column forwarded to me by Geoff GJ4ICD, I thought I would send you a copy of my six metre logs from last autumn onwards, to make you jealous! Isn't that nice of him...5LP.

Seriously though, you are right that European operators are in a luxurious position with regard to six metres DX. In this period we had access to Oceania, North and South America, Caribbean, Africa and Europe. Recent Es has brought many new countries either by dx-peditions or newly licensed countries. e.g. FR/DJ3OS, TAZSA, OD5SK, 3Z4PAR, LZ1BB, UZ2FWA, 9K2ZR, UX1A, EH, EH6, EH9, YL/ES9C. These have taken my countries count to 130 with still more to be contacted.

Contacts from 01/01/92 include 2E0AAX, 2E1ACB, 3Z4PAR, 4N2CCY, 4X1IE, 4Z70IF, 5B4YX, 6Y5/W5F, 7P8SR, 7Q7JL, 9H2KY, 9H5EE, 9K2ZR, 9Y4YU, AA4NC/KP1, CN8BA, CN8ST, CO2KK, CU1CB, CX4HS, DJ1QJ, DJ9KG, EH3KU, EH6VQ, EH9IB, EH9MH, EI2EFB, ESSRY, ES6QB, FH1GT, F8OM, FR/DJ3OS, GD7ANS, 1/G10GDH, I2WSG, I4XCC, JA4MBM, K1TOL, K2QE, K7VAY, KB3QM, KE9I, KG6UH/DU1, KN1E/C6A, KP4BZ, LA3EOA, LA9ZY, LY2WR, LZ1BB, OD5SK, OE8HEJ, OK1DIG, OKIMAC, OK2BII, OK3LQ, OZ3SDC, P43FM,

PT7NK, SM3GHW, SP4TKK, SV1EN, TA5ZA, TI2NA, TM6CHU, TU2OJ, UL7GCC, UX1A, UZ2FWA, VE1HQ, VE1QX, VE1YX, VK4FP, VK4JH, VK4WJS, VK5BC, VK5KJ, VK6AKT, VK6KRC, VK6PA, VK6RJ, VK6RO, VK6WD, VK6ZP, VK6ZPP, W3JO, W8UCI, W9MBL, YL/ESSC, YT3EY, YU3ZY, YU7AL, YV4AS, YV5Z2, ZA1A, ZB0T, ZC4KS, ZK4DRY, ZS4S, ZS5W, ZS6AXT, ZS6JOW, ZS6XJ, ZS6XL, ZS9A

In addition, there are pages of extra contacts with many of the above prefixes, particularly to W, JA, VE, ZS6 and most areas of G.

## Countries worked from Australia on six metres

With the recent publication in the UK Six Metre Group Newsletter — Six News — of the UK (G) Country Firsts on Six Metres, and following a suggestion from Steve VK3OT that we in VK should consider the same, a move to provide such information has been initiated.

A readily available data base is provided by the Six Metres Standings List. All the entries from that list have been brought together and sorted into country order, then the first VK operator to work into each country has been determined and a new list for six metres created, as shown below. This list has produced some interesting facts. The known results from some amateurs not on the Standings List are also included.

For a long time, we in Australia have said our geographical isolation has worked against us when it came to working overseas countries. That may still be so to some extent, but the present list shows that we have collectively worked 161 countries!! Of course, no one has worked all of them, the highest scores so far being in the 90s. A list in descending order of total countries first worked by each operator is included and includes 37 call signs. There must be many more who could be added. 50 and 52 MHz have been combined under a new heading of Six Metres.

Station	Date	Country	Chained by
3D2AG	23/03/92	Rotuma Is	VK2QF
3D2SM	20/05/90	Conway Reef	VK4BRG
457AVR	29/03/91	Sri Lanka	VK9YJ
4X11F	01/04/91	Israel	VK9YJ
5H1HK	05/04/89	Tanzania	VK4BRG
5W1CA	05/12/86	West Samoa	VK3AMK
5Z4CS	28/03/82	Kenya	VK3BG
6W1QC	12/11/90	Senegal	VK4BRG
6Y5RC	28/03/81	Jamaica	VK4PU
7Q7JA	27/03/91	Malawi	VK9YJ
8P6TW	18/04/89	Barbados	VK2QF
8RIAH	02/04/89	Guyana	VK3RH
9H1BT	25/03/89	Malta	VK3RH
9K2WR	03/04/92	Kauai	VK3RH

9L1US	04/11/89	Sierra Leone	VK4BRG
9M2FMX	11/06/89	Malaysia	VK6HK
9M8STA	18/07/89	Malaysia E.	VK2ZLX
9N1BME	02/05/89	Nepal	VK3BG
9Q3EE	02/05/89	Zaire	VK3OT
9V1ES	17/11/89	Singapore	VK2ZLX
9Y4LI	10/04/82	Trinidad	VK3BG
A22BW	28/04/91	Botswana	VK6HK
A3JIT	12/04/80	Tonga	VK3BG
A45ZM	04/04/90	U.A.E.	VK3RH
AH8A	19/04/81	Am. Samoa	VK2BNN
BV2DP	22/09/91	Taiwan	VK6PA
BY5RA	08/05/81	China	VK3BG
C21AA	06/03/71	Nauru	VK4ALM
C6ANY	21/04/92	Bahamas Is	VK2QF
CE0DFL	24/04/90	Easter Is	VK4ZJB
CE3/KB6SL	14/10/90	Chile	VK4BRG
CN8T	20/10/91	Morocco	VK3RH
CQ2KK	16/04/89	Cuba	VK2BA
CR9AJ	28/07/87	Macao	VK3BG
CT1LN	08/10/88	Portugal	VK6PA
CUS/N6AMG	27/11/91	Azores	VK2QF
DC3UG	31/07/90	Germany	VK3RO
DUG/WB5LBJ	11/10/77	Philippines	VK3BG
EAL/GJVL	11/1/89	Canaries	VK3RH
EM6AS	12/10/89	Ireland	VK2ZLX
ER0KA	20/04/92	Asian Russia	VK2ZLX
ESSPC	29/01/92	Estonia	VK6PA
F9DI	15/12/78	France	VK2ZLX
FKMXX	15/12/78	New Caledonia	VK3OT
FMSWD	11/04/90	Fr. Martinique	VK2ZLX
F00CI	13/03/92	Clipperton Is	VK4ZJB
F08DR	12/04/81	Fr. Polynesia	VK2BA
FV/W5JKV	31/03/89	Wallis & Fortuna	VK4BRG
F75AU	30/03/89	French Guyana	VK4BRG
G4FJK	20/03/89	England	VK6KXW
G03AHV	28/02/90	Isle of Man	VK6HK
G4OPH	12/10/89	North Ireland	VK2ZLX
G4MCD	12/10/89	Jersey Is	VK4ZJB
G4MGDT	28/02/90	Scotland	VK6HK
G4ZFRO	06/03/91	Guernsey	VK6PA
GW3LDH	12/10/89	Wales	VK2ZLX
H44DX	26/04/79	Solomon Is.	VK3BG
H00AHB	13/10/91	Luxembourg	VK6PA
H085JV	03/01/92	Switzerland	VK6PA
H2CBI	29/03/91	Ecuador	VK9YJ
HHTPV	19/02/89	Haiti	VK2BA
H8WPC	02/04/89	Dominican Rep	VK2BA
H0/W6JKV	04/04/92	San Andreas Is	VK2QF
H0/W6KCV	04/04/92	Malpelo	VK4ZLX
HK1JXV	03/03/90	Colombia	VK4ZJB
HL19VI	03/03/90	Korea	VK4ALM
HP3XUH	03/03/78	Panama	VK2ZLX
HR1WPK	02/04/90	Honduras	VK3RO
HR85JV	15/03/80	Thailand	VK2ZLX
IDCDD	03/03/91	Italy	VK2ZLX
IS09YJ	10/11/91	Sardinia	VK4ZJB
JA3CF	01/01/89	Japan	VK3RO
JD1ADP	05/05/79	Oyassawa Is	VK3BG
JY1YAA	03/03/88	Mexico	VK3RH
JT1CO	28/06/91	Mongolia	VK6HK
K6ERG	03/03/81	USA	VK4ZAZ
K6GVN	01/03/80	Belau W.Cz.	VK4BRG
K0CN	27/03/80	East Caroline Is	VK3BG
K6CYE	01/10/81	Caroline Is	VK2DDG
K6GSM	04/03/78	Guantanamo	VK2QF
K6GDX	04/03/78	Guam	VK3BG

K6GRO	24/09/78	Sarpan	VK3BG
KH0F	14/04/90	Marana Is	VK5RO
KH1F	03/04/89	Howland Is	VK4TL
KH3AB	28/03/81	Johnston Is	VK3BG
KH4AE	28/02/91	Midway Is	VK4BRG
KH5/	17/04/81	Jarvis/Palmyra	VK5RO
KH6TH	22/08/47	Hawaii	VK5KL
KH6/	23/03/90	Kure Is	VK9JE
KH7/	13/03/79	Alaska	VK2KAY
KH8/EB	27/03/89	Am. Virgin Is	VK3OT
KH9/	13/04/81	Puerto Rico	VK2DDG
KH9/	20/03/51	Okinawa	VK5XK
KH9/	22/03/72	Marshall Is	VK4ALM
KH9/	03/03/81	Canal Zone	VK4RO
KH9/	25/02/89	Guam	VK6HK
KH9/	20/04/91	Norway	VK3OT
KH9/	31/10/90	Luxembourg	VK6PA
KH9/	12/10/90	Peru	VK4BRG
KH9/	09/03/91	Austria	VK2ZLX
KH9/	25/02/89	Finland	VK6HK
KH9/	08/02/91	Czechoslovakia	VK6PA
KH9/	31/10/90	Belgium	VK3RO
KH9/	08/02/91	Denmark	VK3OT
KH9/	28/11/75	Papua N.Guinea	VK3ZAZ
KH9/	27/03/89	Aruba Is	VK4ZJB
KH9/	12/10/89	Netherlands	VK2ZLX
KH9/	02/04/89	Bonaire	VK4ALM
KH9/	26/03/92	Fernando Noronha	VK6PA
KH9/	30/03/89	Suriname	VK4BRG
KH9/	13/10/89	Sweden	VK2ZLX
KH9/	17/10/89	Greenland	VK3RH
KH9/	15/12/87	Tuvalu	VK2BA
KH9/	29/03/89	Kiribati West	VK4ALM
KH9/	15/03/82	Kiribati East	VK2DDG
KH9/	19/05/89	Banaba Is	VK3BG
KH9/	28/03/89	Guatemala	VK2BA
KH9/	26/03/89	Costa Rica	VK4ZJB
KH9/	04/04/91	Central Africa	VK6JQ
KH9/	26/04/91	Namibia	VK6RO
KH9/	08/04/92	Canada	VK2ADE
KH9/	10/12/72	Macquarie Is	VK2BNN
KH9/	15/01/75	Lord Howe Is	VK3ZAZ
KH9/	09/09/50	Australia	VK3RO
KH9/	17/11/73	Papua	VK3NM
KH9/	29/12/50	T.N. Guinea	VK3RO
KH9/	10/03/80	Christmas Is	VK3BG
KH9/	13/01/89	William Reef	VK2BA
KH9/	22/11/78	Wellis Is	VK2BNN
KH9/	27/11/75	Norfolk Is	VK2ZLX
KH9/	22/11/81	Cocos Keeling	VK3BG
KH9/	13/04/79	Br. Honduras	VK3RO
KH9/	01/04/89	Montserrat	VK2BA
KH9/	10/03/81	Br. Virgin Is	VK3OT
KH9/	25/03/89	Turks/Caicos	VK2QF
KH9/	19/02/54	Fiji	VK3RO
KH9/	26/11/80	Brunei	VK3BG
KH9/	05/03/80	Hong Kong	VK3BG
KH9/	01/11/59	Mexico	VK3ZLX
KH9/	14/04/89	Revilla Gigeo	VK2QF
KH9/	03/01/80	Indonesia	VK6OX

Y18KM	01/11/76	New Hebrides	VK4ZSH
Y07VY	21/10/91	Romania	VK8RH
YS1ECB	30/05/89	El Salvador	VK2BA
YUJES	17/10/91	Yugoslavia	VK6PA
YV5/DL32M	19/03/81	Venezuela	VK2DDG
ZAIJZ	27/10/91	Albania	VK6PA
Z80T	22/10/91	Gibraltar	VK8RH
ZC4MK	31/10/90	Sov/Bases Cyprus	VK6RO
ZD7BW	21/05/81	St. Helena Is	VK4TL
ZD8TC	20/05/82	Ascension Is	VK5RO
ZD2DN	28/05/81	Cayman Is	VK2BA
ZK1CG	01/04/89	South Cook Is	VK5BC
ZK1WL	01/03/89	North Cook Is	VK2QF
ZK2RS	29/12/82	Niue Is	VK2BA
ZK3KY	13/10/90	Tokelau	VK4BRG
ZL1WW	27/12/50	New Zealand	VK5RO
ZL4QY/C	19/06/83	Chatham Is	VK2BA
ZL7TPY	21/01/90	Auckland Is	VK4BRG
ZM80Y	10/12/85	Kermadec Is	VK2BNN
ZP6XDW	28/04/91	Paraguay	VK4BRG
ZS6XL	29/04/90	South Africa	VK6RO

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## Country tally in descending order

VK8GB	18	VK2DDG	04	VK4ZAZ	01
VK4BRG	15	VK6RO	04	VK4ZSH	01
VK8ZLX	13	VK9YJ	04	VK5BC	01
VK2BA	12	VK3ZAZ	02	VK5KL	01
VK5RO	11	VK4TL	02	VK6JQ	01
VK6PA	11	VK2ADE	01	VK6KXW	01
VK2QF	09	VK2KAY	01	VK6OX	01
VK8RH	09	VK2ZRU	01	VK9LE	01
VK4ZJB	07	VK3ALZ	01	VK9XK	01
VK6HK	07	VK3AMK	01	VK9XT	01
VK3OT	06	VK3NM	01		
VK4ALM	05	VK4PU	01	Total	161
VK2BNN	04	VK4RO	01		

Spread across Australia, there are many good six metre DX operators whose efforts are not included. After referring to their log books, those operators are invited to add to the list as appropriate. At this stage no QSL cards are required, just a list of your first contacts and date with whatever countries you find. Your call sign and entries will not be added to the Standings List without your approval.

At the present time, there is no suggestion that the above list and dates is complete and correct. But if operators can submit information which allows the list to be upgraded and expanded, then that is the result required. With the co-operation of as many operators as possible we should be able to leave for posterity at least one aspect of the written history of six metres. I believe it is very important that such a history be completed without delay, especially that section which relates to the very early contacts. To allow for Australia wide dissemination of the information the above lists are being published simultaneously in both AR and ARA. Details of contacts with overseas countries may be forwarded to

VK5LP or VK3OT. We are particularly interested in contacts which could have been made starting with solar Cycle 18 (from 1946) onwards, or maybe earlier. As the gentlemen then operating would now be elderly citizens, that early information will be lost forever when they pass on.

All VK operators who have participated in six metres DX, for whatever period, are urged to please make time to search your logs and advise of your first contact with a particular overseas country, and where the date is appropriate, to allow for its inclusion in the above list.

Far from being a boring task, the searching of log books becomes an interesting project, particularly when certain entries bring back memories of the circumstances at the time.

At an appropriate time, a revised list will be published.

## Closure

It has been difficult cramming everything in this month. No room for any chit chat, anyway, six metres has been very quiet and no other reports have been received.

Closing with two thoughts for the month; Ignorance is a form of environmental pollution, and, You can't build a reputation on what you are going to do.

73 from The Voice by the Lake.

## Stolen Equipment

Stolen from Dick Smith Electronics, Coburg branch (Victoria) during late August 1992, one YAESU FT470 Dual Band Hand Held FM Transceiver, serial number 1K 430817. Contact George Alexandrakis, Victorian Supervisor, Dick Smith Electronics, 656 Bridge Road, Richmond Vic 3121, Tel (03) 428 1614.

Stolen from car on 27 August 1992, one Standard Hand Held FM Xcvr, model No C528, plus manual, serial number OOE150667, Dion VK2PD and VK2XSB.

**Support the  
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Amateur Radio  
Magazine**

## Morseword 68

Solution on page 58

	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

- Across**
- 1 Taxi
  - 2 Not me
  - 3 Prevalent
  - 4 Cuddle
  - 5 Be concerned
  - 6 Flower Holder
  - 7 Floating Platform
  - 8 Frosted
  - 9 Fail to Catch
  - 10 Copied

- Down**
- 1 Donated
  - 2 Simple
  - 3 Dug for
  - 4 Corrosion
  - 5 Laughing
  - 6 Doorways
  - 7 Lump
  - 8 US state
  - 9 Part of the eye
  - 10 Annoy

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# HAMADS

## TRADE ADS

● **AMIDON FERROMAGNETIC CORES:** For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kuma NSW 2533 (no enquiries at office please ... 14 Boonyo Ave Kiama). Agencies at Geoff Wood Electronics, Sydney Webb Electronics, Albany Assoc TV Service, Hobart Truscotts Electronic World, Melbourne.

● **WEATHER FAX programs for IBM XT/ATs** \*\*\* "RADFAX2" \$35-00, is a high resolution shortwave weatherfax, morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. \*\*\* "SATFAX" \$45-00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. \*\*\* "MAX-ISAT" \$75-00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3-00 postage. ONLY from M Delahunt, 42 Villiers St, New Farm QLD 4005 Ph (07) 358 2785.

## FOR SALE NSW

● **WIA MORSE PRACTICE TAPES** speeds from 6wpm to 12wpm. Good for upgrade, exc cond, sell for \$2 ea inc postage, (02) 99 2933 after 6.00pm, ask for Steve.

● **KENWOOD TS520S TXCVR**, exc cond, desk mic, manual, two spare filters, brand new, \$600, VK2GZ QTHR (069) 62 3576

● **DECEASED ESTATE, KENWOOD Comma Rx QR66S, VGC, \$200, EMSON EAT300A ant tuner, vrt new, \$150, METEX digital n/meter, vrt new; \$50; DICK SMITH Q1140 n/meter (in case), vrt new, \$50, SANWA n/meter, GC, \$10; HIOKI meter (in case), GC, \$15, QMAX dip meter & coils, GC, \$20, HUNG CHANG OS620 oscilloscope, vrt new, \$600; ROYCE soldering station & ctrlr, GC, \$80; DICK SMITH TV pattern gen kit, \$15; DICK SMITH Zener Diode tester kit, \$10; PATON ELECTRIC Co n/meter MX30, Golden Oldie, \$60; H/BREW lab PSU AEM 251 kit, \$40; PANTHER PSU 13 Bv 2A, GC, \$30; KIKUSUI DEN-PA Co RC Sig Gen ORC27 (18Hz-200kHz), \$50, DICK SMITH RCI meter kit, GC, \$15; DICK SMITH transistor tester, GC, \$15; DICK SMITH stereo TV sound RC, GC, \$50; DICK SMITH CR sub box, GC, \$20; SANSUI ELEC CORP airt tracer & injector, VGC, \$30; INTEGRATED circuit extractor kit (var tools), as new, \$15, SIG Injector, GC, \$10, LEADER sig gen LSG11, GC, \$20, MOTOR CYCLE BC (rear mounting), 18 ch, vrt new, \$60, SCOPE soldering iron, wkg, \$50, SWR meter, RC, \$20; PTT mics, 2 off, cap, \$20, SANYO hand dictaphone, \$30, EA digital power meter kit, GC, \$30, LOW**

FREQUENCY oscilloscope circa 1950, GC \$25; all enquiries Tel (02) 980 1627

● **6 MX ATN 5 el LP Yagi**, 9.7dbi gain, \$100 ONO, Steve (02) 674 2104 after 6pm EST/EDST.

## FOR SALE VIC

● **DECEASED ESTATE** of the late Len Herman, VK3NF; KENWOOD TS820 txcvr s/n 611299, SP520 spkr s/n 53C874, VF082 remote VFO s/n 510849, \$1,100; HELRAY Peak Power Indicator 400W s/n 811-024-400, \$55-00; YAESU FT200 txcvr s/n 339182, FP200 spkr/PSU, \$575-00; HEATH HN-31 1kW Centenna Dummy load, s/n 14007, \$75-00; VARIABLE AUTOTRANSFORMER, SB5 5amp, 240v, \$50-00; TRIO SG402 RF signal generator, s/n 440454, \$129-00; TRIO AG202A audio generator, s/n 464104, \$159-00; DATONG FL1 frequency agile audio filter, s/n 4292, \$190-00; HEWLETT PACKARD 410C VTVM & RF probe, \$50-00; HYGAIN TH3JR 3 el HF beam antenna, \$100-00; HAM-M Cornell CDR Ham Rotator, \$75-00; HYGAIN 14AVHF HF trapped vertical antenna, 10, 15, 20 m, \$30-00; LINEAR AMPLIFIERS (2), class "B", 200W, 2x611As, \$450-00 ea; LINEAR AMPLIFIER class "B", 8873, \$450-00; OUTPUT VALVES, 10 x SP61466, \$30-00; VALVES 2 x 6J58CA, \$10-00; 2 x 8873 VALVES, Sockets, Heat Sink, \$2-00; enquiries to John Sanders, (03) 802 1849.

● **DECEASED ESTATE** of the late Bill Hehr, VK3RE, All equip listed below is in mint cond; KENWOOD TL922 lin amp, c/w tubes, manual, orig pack, S/N 750056, \$1950; KENWOOD TS820S Xcvr, manual, S/N 740782, \$850; KENWOOD SP820 spkr box, c/w filters, sell with txcvr, \$85; YAESU FTD400 xcvr, manual, S/N 5033852, some spare tubes, c/w AWA OM13 mic, \$350; YAESU FTD400 remote VFO (sell with xcvr), \$85; YAESU FTD400 spkr box (sell with xcvr) \$30; YAESU FL2100B lin amp, c/w tubes, manual, \$850; YAESU FF500D i/o pass filter, \$25; ICOM IC701 xcvr, matching PSU, base & mobile mics, S/Ns 80002371, 7801310, WEBSTER Band Spanner ant & spring base, 4 mob whips, mag mount, \$950; ICOM IC22S FM xcvr, S/N 11977, 146-148 MHz, manual, mic, \$250; KW ELECT PWR/SWR meter KW103, 1kW, 52 ohm, S/N 424, \$40; KYORESTU SWR meter K109, 25S, PALOMAR Noise Bridge, manual, \$50; KAISE ELECTRIC low ohm meter, 0-5, 0-25 ohms, 2% acc, leads, case, \$25; COAX SWITCHES (2), 1x3 IPB, 1 rotary, SO239S, S/N 9412, 1x2 pots, 2x28VDC, SOLEN type N, small, \$75; NIDAC PPS-3 alarm PSU, \$25; DUMMILY LOAD HRL250, 12" long, \$50; DSI 3600A freq counter, manual, S/N 7984, \$50; JAPAN SERVO CO LTD fan motor approx 4.5" square, cast alum, model CU52133, 208-230V,

14/12W, 50-60 Hz, 1" deep, \$20; RG213 COAX, new, app 200ft, \$80; SML SWR-15 meter, 3.5-150 MHz, \$30; 2xIRI 5000 ohm 60W WW resistors, type HO, 12 2%, top coat, new, c/w mounting bkts, 12" long, \$10 each; 2x6146B GE USA tubes, \$50 pair; 1 new boxed Richard Allan twincone HIFI spkr, type CG&T, 80 ohms, 1 new boxed GOODMANS AXIETTE 118 spkr, \$30 each; 2 pair NATIONAL stereo headphones, HIFI model EAH 65, 8 ohms, \$25 each; the following items are in VGC cond, TOWER crank up, 3 sect, HD Gal, ext 70 ft, Bot sect 12" tri, Tiltover base plate, mounted prop pitch motor, mast Selayn indicators, 150 ft RG8, 150 ft all other cables incl AC power, 2 sets steel rope guys, 1 set (top) poly prop rope, all very long, mounted power tranny in wv proof box, \$1500; HYGAIN TH8DX Tn Band beam, balun, manual, was fitted to above tower, \$350, HYGAIN 204BA 20 m 4 el mono band ant, manual, \$200; all enquiries to John VK3HW, QTHR, (03) 324011.

● **RACAL RA17L communications RX, VGC, Tech Manual \$470; HEATHKIT SB301 RX, HEATHKIT SB 850 Freq Display SB600 Spkr, exc cond, serv man, \$300; contact (052) 46 1410 A Hrs.**

● **YAESU FT102 TXCVR** with FV107 EXT VFO, YD148 desk mic, \$725 the lot; Syd VK3D5P (059) 85 2170.

● **IRON CORE 240/24V 41A transformer** with three large heat sinks plus screw-in rectifiers mounted on metal plate, offer; COMMERCIAL ITT RX/TX type FRS-1/25ft innards mounted on two slide out drawers, 50ft x 375" HELIX cable plus 10ft fibre glass enclosed 470 MHz co-phased vertical antenna to match, going cheap; VK3YJ QTHR (03) 315 9387

● **BAYSIDE QTH**, three Badr, Brick, sep shack, great VHF/UHF area, Nally Tower, see view, Ted VK3TG (052) 59 3225.

● **YAESU FTD570 Xcvr**, with mic, manual, some spare valves, GC, capable of 400w PEP, \$220, Stewart VK3NV (059) 87 3592

● **TRANSFORMER A&R 2KV at 350mA; AWA 3ph 1 5kV at 0.3A, ea sec 20; 70 GAL HW tank 30 lbs Cu for Earth strips, \$30., HD Copper wire 16 & 12 SWG, \$1 lb; COAX RG8 & RG11, \$1 m, BAMBOO Poles 14'-18', BO FG rods 6" & 8", \$1 pft, ALUMINIUM tube various sizes, \$1 lb; Syd Clark VK3ASC QTHR (059) 71 1861**

● **NALLY TOWER** complete with Daiwa rotator, tower already on ground, good cond, Denis VK3XP (03) 364 8733 (Bus) or Mobile (018) 178 922

● **MICROBEE 128K series 3 CP/M computer** with dual 3.5" and 1 x 5.25" floppy drives, mono monitor, manuals, orig software, includes Elect Aust RTTY Modem, yv good cond, \$350, Bruce VK3UV QTHR (03) 580 8424, Mob (018) 386 030

● **KENWOOD TS350S, MC 355, AT230, SP230, spare Mullard valves/driver, MALDOL**



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# Solution to Morseword No 68

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	1	2	3	4	5	6	7	8	9	10
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10	.	.	.	.	.	.	.	.	.	.

## Solution to Morseword No 68

Across: 1 cab; 2 you; 3 rifle; 4 hug; 5 care; 6 vase; 7 raft; 8 loed; 9 miss; 10 aped.

Down: 1 gave; 2 easy; 3 mined; 4 rust; 5 rant; 6 gates; 7 mass; 8 lows; 9 iris; 10 rile.

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# VK QSL Bureaux

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VK1	GPO Box 600 Canberra ACT 2601
VK2	PO Box 73 Teralba NSW 2284
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VK4	GPO Box 638 Brisbane Qld 4001
VK5	PO Box 10092 Gouger Street Adelaide SA 5000
VK6	GPO Box F319 Perth WA 6001
VK7	GPO Box 371D Hobart Tas 7001
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- A concise instruction manual with photographs and diagrams which takes you through all areas of operation.
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IC-R7100



IC-R100



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IC-R1